Below are comments submitted via the Conversion Map received after the 12 April 2017 deadline to be addressed in the Supplemental Staff Report for the 24 April 2017 hearing.				
	Amendolagine, Vincent	4/13/17		410 Solar Rd NW, Albuquerque, NM 87107, USA 6131 4th St NW, Los Ranchos De Albuquerque, NM 87107, USA 6310 4th St NW, Los Ranchos De Albuquerque, NM 87107, USA 311 La Plata Rd NW, Albuquerque, NM 87107, USA these parcels are now residential and have limited commercial use. This protects and buffers our neighborhoods. The neighbors and neighborhoods will have no control over what goes on for those properties as far as commercial development. There have been attempts to put in businesses on some of those properties that would greatly diminish the quality of life in surrounding neighborhoods. one proposal in all likelihood would have made it difficult to impossible to exit our street at rush hour in the morning. This proposal cannot stand. also i just got this email. so late notice

From:	Renz-Whitmore, Mikaela J.
To:	Planning Comp Plan-UDO; Lehner, Catalina L.; Reed, Terra L.
Subject:	RE: Additional Comments Regarding the Current IDO Draft
Date:	Monday, April 17, 2017 11:31:13 AM

Oops. These are still within 48-hour rule for April 24. Sorry for any confusion.

From: Renz-Whitmore, Mikaela J.
Sent: Monday, April 17, 2017 11:31 AM
To: Planning Comp Plan-UDO; Lehner, Catalina L.; Reed, Terra L.
Subject: FW: Additional Comments Regarding the Current IDO Draft

Please put these in the project file for Council consideration.

Thanks!

M

From: Govinda Haines [mailto:bwanawazimu@yahoo.com]
Sent: Monday, April 17, 2017 10:01 AM
To: Schultz, Shanna M.; Renz-Whitmore, Mikaela J.; Veronica Salinas; Davis, Pat; Foran, Sean M.
Subject: Additional Comments Regarding the Current IDO Draft

Dear Project Planners,

The Neighborhood Edges section in the current Draft IDO, under Applicability (Section 4-8.2.) states that:

"These standards apply to all lots that: (2) share a side or rear lot line with, or are located across a street from: (a) a lot in the R-A, R-1, R-MC, or R-T zone district that contains a Household Living use (as shown in Table 3-2-1) other than a live-work dwelling or a multifamily dwelling"

Please change this language so that the Neighborhood Edges building height stepdown standards apply to lots adjacent to all lots in the R-A, R-1, R-MC, and R-T zones, including live-work and multifamily dwellings. There is no reason residents in live-work or multifamily dwellings should be denied the protections other residents have.

On my street (Aliso) there are many historic properties that are zoned multifamily at the end of the street near Central. These properties are 1-story high (approximately 12 feet) and are nearly indistinguishable from the surrounding historic single family properties. There is no buffer between the residential zone and the MX-M zone across Copper. Clearly, this Neighborhood Edges section should apply to this situation, regardless of the whether the residential properties are duplexes or single family dwellings.

Thanks,

Govinda Haines

From:	Erick Johnson
To:	Planning Comp Plan-UDO
Cc:	Terry Johnson
Subject:	RE: IDO Zoning
Date:	Wednesday, April 19, 2017 10:37:32 AM
Attachments:	CABQ Ltr RE 123 Montano Proposed Zoning 4.19.17.pdf JCRE Ltr RE IDO Zoning Concerns 4.19.17.pdf

Carol,

As a follow up to our meeting last Friday, attached is a letter regarding the request to change the proposed zoning for 123 Montano NW to NR-LM as well as our comments regarding multiple different uses as relates to the proposed zone changes.

Thanks,

JOHNSON Commercial Real Estate

Erick Johnson CCIM, SIOR
7550 Meridian Pl NW
Albuquerque, NM 87121
Office: (505) 831-3333
Mobile: (505) 710-8501
Fax: (505) 833-2925
Email: erick@jcrenm.com
Website: www.jcrenm.com

From: Toffaleti, Carol G. [mailto:cgtoffaleti@cabq.gov] **On Behalf Of** Planning Comp Plan-UDO
Sent: Friday, April 07, 2017 9:59 AM
To: Erick Johnson; Planning Comp Plan-UDO
Cc: Terry Johnson; Angelo Brunacini
Subject: RE: IDO Zoning

Erick,

We look forward to meeting with you next Friday, and to receiving the property information. Thanks for the permitted use concerns.

Best,

Carol Toffaleti, Senior Planner
Urban Design & Development/Long Range
City of Albuquerque Planning Department
Direct line 924-3345
cgtoffaleti@cabq.gov

IMPROVING PLACE FROM PLANNING TO ZONING
http://www.abc-zone.com/

From: Erick Johnson [mailto:erick@jcrenm.com]
Sent: Friday, April 07, 2017 9:44 AM
To: Planning Comp Plan-UDO
Cc: Terry Johnson; Angelo Brunacini
Subject: RE: IDO Zoning

Carol,
Thanks for the email. How about 2:30 on Friday 4/14. I will send you a list of property addresses in the next day or so. In addition to discussing specific properties, we also have concerns regarding some limitations of use in certain zoning categories (e.g. cold storage only being permitted in NR-LM & NR-GM) which we'd like to discuss. When I send you the list of property addresses, I'll also include these use concerns.
Thanks,

JOHNSON
Commercial Real Estate
Erick Johnson CCIM, SIOR
7550 Meridian Pl NW
Albuquerque, NM 87121
Office: (505) 831-3333
Mobile: (505) 710-8501
Fax: (505) 833-2925
Email: erick@jcrenm.com
Website: www.jcrenm.com

From: Toffaleti, Carol G. [mailto:cgtoffaleti@cabq.gov] **On Behalf Of** Planning Comp Plan-UDO
Sent: Friday, April 07, 2017 8:26 AM
To: Erick Johnson; Planning Comp Plan-UDO
Cc: Terry Johnson
Subject: RE: IDO Zoning

Hello Erick,
Our next open slot for appointments is Fri 4/14 at 2:30. Would that work for you? We could also do 3:30, or the following week on Monday or Friday afternoon.
It would be helpful to know the addresses of the parcels you would like to discuss before our meeting.
Thank you for reaching out to the ABC-Z Team to address your concerns.
Best Regards,

Carol Toffaleti, Senior Planner
Urban Design & Development/Long Range
City of Albuquerque Planning Department
Direct line 924-3345
cgtoffaleti@cabq.gov

http://www.abc-zone.com/

From: Erick Johnson [mailto:erick@jcrenm.com]
Sent: Thursday, April 06, 2017 4:35 PM
To: Planning Comp Plan-UDO
Cc: Terry Johnson
Subject: IDO Zoning

We'd like to set an appointment regarding the proposed zoning of certain parcels as well as limitations of certain uses under proposed zones.
Thanks,

Erick Johnson CCIM, SIOR
7550 Meridian Pl NW
Albuquerque, NM 87121
Office: (505) 831-3333
Mobile: (505) 710-8501
Fax: (505) 833-2925
Email: erick@jcrenm.com
Website: www.jcrenm.com

T Johnson Management, LC

7550 Meridian Place NW
Albuquerque, New Mexico 87121
Post Office Box 7326
Albuquerque, New Mexico 87194-7326
505-710-8415
terry@jcrenm.com

April 19, 2017

City of Albuquerque Planning Department
Plaza del Sol Building
600 Second NW
Albuquerque, NM 87102

RE: 123 Montano Rd NW, Albuquerque NM

To Whom it May Concern:

As agent for the ownership of the above referenced property, we request that the proposed zoning in the Integrated Development Ordinance for 123 Montano NW be equivalent to its current M-1 zoning. Based on your online material the proposed zoning for 123 Montano NW is MX-M. The property has been an industrial facility since the 1960's and continues to function as such. Due to the good condition and modern building characteristics, we would anticipate the industrial use of the property to continue for another 30 to 50 years. For this reason, we request the proposed zoning for 123 Montano NW be changed to NR-LM.

Sincerely,

Terry L. Johnson CCIM, SIOR

April 19, 2017

City of Albuquerque Planning Department
Plaza del Sol Building
600 Second NW
Albuquerque, NM 87102

RE: ABC-Z Zoning Concerns & Comments

To Whom It May Concern:

Below is a list of our concerns regarding certain uses specified in the proposed Integrated Development Ordinance.

Food, Beverage, and Indoor Entertainment:

- **Bar, Restaurant, Tap Room/Tasting Room –** Clarification needed: Why is a restaurant serving alcohol a Permissive use in MX-L, but a Bar and Tap Room/Tasting Room in MX-L are Conditional?

Motor Vehicle – Related:

- **Heavy vehicle and equipment sales, rental, fueling, and repair** needs to be a permitted use in NR-BP and in NR-C. On the Westside of town there are multiple truck repairs facilities that would be in either NR-BP or NR-C. Provided the use is "conducted in a completely enclosed building or within an area enclosed on all sides by a wall or fence at least six feet high, which must be solid when it faces or abuts land not zoned C-2, C-3, M-1, or M-2", equipment rental, sales, display, and repair operative contractor's and heavy farm equipment is permissive in C-3 and M-1. Additionally, "manufacturing, assembling, treating, repairing, or rebuilding articles except those conditional or otherwise limited in this zone and the M-1 zone or specifically listed permissive or conditional in the M-2 zone, provided manufacturing is conducted within a completely enclosed building" is permissive in the IP zone.
- **Outdoor vehicle storage** needs to be a permitted use in NR-C and NR-BP. It is understood screening from public rights of way may be required. We are seeing an increased demand for outdoor vehicle storage with limited options available in the market. We need to be able to accommodate this demand and with limited inventory of properties currently zoned M-1 and M-2, if outdoor vehicle storage/parking were permitted provided a such storage is surrounded by a solid wall or fence, this would be very helpful.
- **Car Wash –** Why was this use deleted as Permissive in MX-M and added back as Conditional

Offices & Services:

- **Construction contractor facility and yard** needs to be a permitted use in NR-C and NR-BP. Again these uses are all over C-3, IP, and M1 land currently. Provided the use is "conducted in a completely enclosed building or within an area enclosed on all sides by a wall or fence at least six feet high, which must be solid when it faces or abuts land not zoned C-2, C-3, M-1, or M-2" a construction contractor's equipment storage, or contractor's plant is currently permissive in C-3 and M-1.
- **Personal and Business Services, small & large** – what is breakpoint regarding size?

Retail Sales:

- **Building and Home Improvement Materials, large –** what is definition of "large?" This use might be appropriate for MX-M and MX-H.
- **General Retail, small, medium, and large –** Clarification: Is "small" 0 – 10,000 sf; "medium" greater than 10,000 up to 50,000 sf except for grocery stores that can go to 70,000 sf, and "large" greater than 50,000 sf? Can we assume that "small" and "medium" are Permissive in "large?"
- **Liquor retail –** Needs to be Permissive in MX-L and MX-M for existing locations. Existing C-1 zoned properties for package liquor sales are currently permissive. For this reason package liquor needs to be permitted in MX-L and MX-M.

Transportation:

- **Freight terminal or dispatch center** needs to be permitted in NR-BP. It is understood screening from public rights of way may be required.

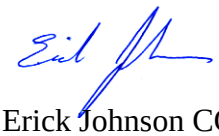
Manufacturing, Fabrication, and Assembly:

- The definition of **Heavy Manufacturing** excludes uses currently permissive in the IP and M-1 (and in some cases C-3 zone). These uses include concrete or cement products manufacturing (not including batch plant), processing of stone (granite fabricators), machine shop, metal stamps, tool and die making, and ice plant.

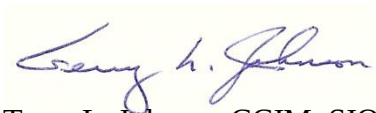
Please feel free to contact us with any questions, (505) 831-3333.

Sincerely,

JOHNSON COMMERCIAL REAL ESTATE LC



Erick Johnson CCIM, SIOR



Terry L. Johnson CCIM, SIOR

From:	Renz-Whitmore, Mikaela J.
To:	Lehner, Catalina L.; Planning Comp Plan-UDO
Cc:	Reed, Terra L.
Subject:	FW: IDO Comments for the record
Date:	Wednesday, April 19, 2017 3:32:00 PM
Attachments:	Comments to EPC-2.docx

Please include in 48-rule comments.

Thanks,

M

From: President Martineztown [mailto:sbmartineztown@gmail.com]
Sent: Wednesday, April 19, 2017 2:40 PM
To: Rumpf, Linda; Armijo, Alan B.; Carmona, Dalaina L.; Montoya, Donna M.; Quevedo, Vicente M.; Renz-Whitmore, Mikaela J.; Brito, Russell D.; Benton, Isaac; Barkhurst, Kathryn Carrie
Subject: IDO Comments for the record

Please see attached comments from the SBMTNA regarding concerns that need to be addressed in the IDO before passing.

We look forward to working with the City to ensure a stronger future for all of us.

Carol
SBMTNA Secretary

4/16/17

Santa Barbara/Martineztown Neighborhood Association

Written comments for EPC in regards to IDO

14-16-3-1.4

Previously Permitted Uses: Wording needs to be changed to include previous conditional uses as approved as well

Notifications:

Please include;, Declaratory Rulings, and Fence, Wall or Sign Permits under Electronic Mail.

Manufacturing:

If the intent was to rate manufacturing by size, the explanation was NOT carried down into the descriptions and it is difficult to understand. Please clarify descriptions.

Areas of Consistency

I can only find development standard references to Residential zone/districts in Areas of Consistency, if this does not include Residential Uses in Mixed use Zoning then we have an issue. Despite our mixed use zoning over 95% of it is currently single family residences, we do not have issue with most commercial uses listed but they must respect the surrounding residences when building. Unless I missed it please consider revising to include mixed use areas and for MX-M zones.
Possibly something like,
"If a MX-M Zone is in an Area of Consistency that is primarily a single family detached use, design height standards will be capped

at no more than 1 story (X ft) above surrounding buildings and be of similar design character." There should NOT be a "No Limit(height)" clause in a mixed use area that is primarily residential use

14-16-4-8.1 ** <u>of utmost importance</u>**

Neighborhood Edge, Purpose

Our largest and most dense single family neighborhood is zoned a mixed use NRC/MX-L. It needs the protection that Neighborhood Edge will give but because it is not zoned as residential it is left out.

Wording needs to be changed to include that the Neighborhood Edge provision **can be triggered by Single Family Detached <u>Use,</u>** not just by zone.

We are requesting that he Neighborhood Edge Provision be included and applied to our old and historical neighborhood and all similar neighborhoods. This provision would help developers better integrate with the current architecture of the neighborhood in question. SBMTNA has identified 7 historically accurate architectural types and we would like to see them honored and enhanced in order to keep our neighborhood unique, vibrant, and honor its legacy.

As mentioned above and in concert with City Planning, William Dodge (a very well versed historian) and the SBMTNA Board, we have developed and made available on our website –

www.sbmtna.org- under the History and Preservation Tab, a copy of our Neighborhood Handbook and Design Guidelines. As soon as the IDO is approved we will submit this document at our template for our Character Protection Overlay. From now until then, we will continue to obtain our neighborhood residents' input and approval for this document.

Once again we volunteer to be considered first when starting the Community Planning Assessments, although we are very aware that we are not the only neighborhood in need. Since the mid-1950s, we have not been treated the most fairly by the City and many decisions were taken that did not, and could not because of internal discord, affirm our neighborhood. We are now at this juncture in time and history where we have the opportunity to revitalize and protect our historically and culturally rich neighborhood. Only through your help can we right the wrong, provide protections where needed and mend our community.

In the mid-century past, a number of outside (City and commercial) interests thought and decided (without our support or approval) to re-zone this historically residential, agricultural and sheep herding community as heavy commercial and industrial. That started our downfall towards poverty. This situation is of grave concern to us and over the decades has also created a major rift, heavily laden with distrust between property owners and towards the City and Officials. To remedy this injury, once the IDO is passed, we will seek future zone changes with map amendments for at least 3 of our primarily residential land use but commercially zoned areas. In the mean time for the hard work ahead, we seek your approval to hire a Council-sponsored outside agent who

would train and guide us in the effort of informing accurate and truthfully all said residents of the pros and cons of a voluntary zone change.

In closing, our community is still divided about our future. We are all deeply passionate in honoring our community, its history, culture and legacy. Albeit, our viewpoints differ. The MWG wants all of SBMT to become strictly residential, “as it was”. The SBMTNA knows our small community **was** full of small businesses that made it self-sufficient and welcomes, in addition to current and future residents, live/work, small business and new development/upgrades that integrate harmoniously in our community.

Thank you for your time and attention.

Respectfully,

SBMTNA Board

April 19, 2017
RE: Environmental Planning Commission Consideration April 24, 2017 hearing.
On the City of Albuquerque Integrated Development Ordinance
Hand Delivered: To the City of Albuquerque Planning Department
Attn: Catalina Lehner, Staff Planner
600 2nd St. NW
3rd Floor City of Albuquerque Planning Department
Albuquerque, NM 87103

Dear Environmental Planning Commission Karen Hudson, Chair and Members,

I am writing in regards to the proposed Integrated Development Ordinance (IDO) is not consistent in protecting the health, safety, morals and general welfare of the residents of San Jose.

San Jose is a neighborhood located in the South Valley of Albuquerque, a neighborhood which is predominantly low-income and minority, and bears a higher proportion of air pollution sources and disease burden, and experiences lower life expectancy than other neighborhoods in Bernalillo County. A neighborhood recognized by the Unites States Environmental Protection Agency as an "Environmental Justice Community," because, the families of San Jose have two Superfund sites, the South Valley Superfund Site and the AT&SF Superfund Site. San Jose makes up less than one percent of Bernalillo County's population yet have 29% of polluting industries in Bernalillo County.

Today, the proposed IDO is not advantageous to the community of San Jose. In fact, it will be harmful to the neighborhood and adjacent property, in the community of San Jose.

During the processes of the IDO the City of Albuquerque Planning Department has failed to protect the health, safety, morals and general welfare of the residents of San Jose. The proposed IDO is not in compliance with Resolution 270-1980 which states the City of Albuquerque are to protect the health, safety, morals and general welfare of the residents of San Jose.

To give you a better understanding of the health disparities and environmental impacts the families of San Jose has endured for many decades. I am enclosing to the record documents/reports that have been written by experts, organizations and students on behalf of the community of San Jose.

Documents/Reports on the Community of San Jose:

Written testimony from experts Kitty Richards, Dr. George Thurston, Dr. Dana Rowangould testifying on behalf of the San Jose neighborhood on Honstein Air Quality Permit #3131.

- Written testimony includes an overview of the socioeconomic and demographic characteristics including racial and ethnic composition of the San Jose neighborhood.

- Data on the concentration of air pollution sources within San Jose compared with Bernalillo County
- Data on age-adjusted mortality rates for the 50 leading causes of disease and life expectancy for the San Jose neighborhood.
- Air permit effects of air quality, health impacts and exposures of volatile organic compounds (VOC) on the community of San Jose.
- VOC associated with increased risk of adverse health effects, and are emitted by the kinds of industry (and associated traffic) that is prevalent in San Jose and adjacent neighborhoods.
- VOC air pollution health risk to community members in an already underserved and disadvantaged community.

Breathe in New Mexico - report profiles of the community of San Jose and Southwest Organizing Project campaign to help the community of San Jose collected their own air quality collected data to understand what the families are breathing on a regular basic.

Health Impact Assessments on:
How the Sunport Boulevard Extension Project will affect health and well-being of the families of San Jose.

NMRT – Proposed development of dirty Material Recovery Facility, Recycling Center, and Transfer Station lingering effects on human environment, traffic, pollution and noise impacts on the residents of San Jose and Mountain View Neighborhoods.

Developing Sustainable Transportation Strategies for Albuquerque's San Jose Neighborhood – Prepared by students of Dr. Gregory Rowangould of University of New Mexico to help Steven and Esther Abeyta community of San Jose activist who work tirelessly to improve the quality of life of the community of San Jose. Have an understand of the community of San Jose.

I hope when you the EPC Board, consider the IDO you will review the documents/ reports I have submitted on the neighborhood of San Jose. Take into consideration, the proposed IDO is not advantageous to the community of San Jose, will be harmful to the neighborhood and adjacent property, in the community of San Jose. Is not in compliance with Resolution 270-1980 which states the City of Albuquerque are to protect the health, safety, morals and general welfare of the residents of San Jose.

To achieve meaningful protection from environmental and health hazards and, will give the opportunity to offer equal access to the decision-making process where low income communities of color to have a healthy environment in which to live, pray, learn, and work.

Give the families of the community of San Jose a chance to heal their environment, help the residents live in a community from becoming sick because of where we live, an opportunity to live in a neighborhood where the people can be proud to call their home. Not have the families in

San Jose feel despaired, not valued, marginalized, and treated as throw aways by the City of Albuquerque and Bernalillo County.

Today you have an opportunity to put some protections in the IDO to help the families living in San Jose by deferring the IDO. I hope you have heard at the EPC hearing the concerns we have expressed and will have compassion and grace upon your hearts and the community of San Jose.

Sincerely,
Steven & Esther Abeyta

2419 William SE
Albuquerque, NM 87102
sjna1@live.com

STATE OF NEW MEXICO
Before the
ALBUQUERQUE-BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD

IN THE MATTER OF THE PETITION FOR
A HEARING ON THE MERITS REGARDING
AIR QUALITY PERMIT NO. 3131 [Honstein Oil]

WRITTEN TESTIMONY OF KITTY M. RICHARDS

I, Kitty Richards, hereby swear and affirm that the following is true to the best of my knowledge. I am qualified and competent to give this declaration, and the factual statements herein are true and correct to the best of my knowledge, information and belief. The opinions expressed herein are based on my best professional judgment.

I. Name and Title

My name is Kitty M. Richards. I am an independent consultant with my own consulting business.

II. Background and Experience

I have a Bachelor of Arts degree in Geography from the University of California, Santa Barbara, a Master of Science degree in Resource Economics from New Mexico State University, and a Master in Public Health degree from the University of New Mexico. I have over twenty-five years of experience in the environmental health field.

Since September of 2014, I have been a private consultant on environmental health issues in New Mexico for various clients including New Mexico Department of Health, Santa Fe Community Foundation, and the New Mexico Voices for Children.

SWOP Exhibit 1

Prior to June of 2014, I worked for 25 years in the environmental health field for state and local government. In the 1980's I worked as an environmental scientist for the New Mexico Environment Department in the Superfund Section, from 1991 to 1994, after receiving my Master degree in Resource Economics, I again worked for the New Mexico Environment Department, District III, as an environmental scientist covering border issues along the U.S.-Mexico border and worked on the Environmental Protection Agency's Border XXI initiative.

From 1994 to 2002, I worked as an epidemiologist for the New Mexico Department of Health's Border Health Office. As an epidemiologist for the Border Health Office, I was responsible for administering a $1 million program to address community environmental health issues in the colonias, monitoring ground and surface water quality throughout Southwest New Mexico, conducting epidemiological assessments, conducting community environmental health assessments, overseeing grants, and monitoring contracts and related deliverables.

From 2002 to 2014, I worked as a program manager for Bernalillo County's Office of Health and Social Services (previously the Bernalillo County Environmental Health Department) Health Promotion Program. I was responsible for administering grants, monitoring contracts, supervising personnel, conducting health impact assessments, and providing environmental and environmental health technical services to communities throughout the unincorporated area of Bernalillo County. In addition to my role as a Program Manager, I was also responsible for leading a Bernalillo County government effort called, "Place Matters" from 2006 to 2012. As the leader of Place Matters, I was responsible for facilitating and convening monthly

meetings of health professionals and community residents to address environmental justice and health disparities issues among people of color and low-income communities, as well as developing proactive policies to address the disproportionate health and environmental burdens of these communities. The Place Matters work culminated in a report, "Place Matters for Health in Bernalillo County", which evaluated the impact of neighborhood conditions on health status. Conclusions confirmed perceptions of vulnerable communities, that they were being exposed to disproportionate environmental burdens and that they were bearing a higher health burden than for Bernalillo County as a whole.

From 2004 – 2006, I was the principle investigator for a Community Action for a Renewed Environment (CARE) grant, funded by the Environmental Protection Agency, to evaluate existing practices and promote best practices at auto salvage yards located throughout the South Valley. Air pollution monitoring and data assessment for volatile organic compounds and particulate matter at each auto salvage yard was part of the overall evaluation.

From 2002 – 2008, I was responsible for coordinating and facilitating a multi-million dollar federal National Institute for Environmental Health Sciences grant to Bernalillo County to address environmental justice issues within the unincorporated areas of Bernalillo County.

During my tenure at Bernalillo County, I conducted numerous studies throughout the South Valley of Bernalillo County on air quality, water quality, and health. Air quality studies utilized publicly accessible data through the AIRS database of the Environmental Protection Agency and well as primary data collected

via personal monitors to assess personal, outdoor and indoor air quality and human exposures. In response to community concerns regarding the cumulative impact of air emissions to their community's health, the Albuquerque-Bernalillo County Air Quality Control Board formed an Environmental Justice Task Force. I was a member of the Environmental Justice Task Force and I was also responsible for the monitoring and payment of a consultant hired by Bernalillo County to facilitate the work of the Environmental Justice Task Force and to develop recommended next steps as a result of the work.

III. Analysis and Conclusion

A. Introduction

My testimony will include an overview of the socioeconomic and demographic characteristics of the San Jose neighborhood when compared with Bernalillo County, including racial and ethnic composition. Socioeconomic and demographic data will come from the U.S. Census Bureau. I will also provide data on the concentration of air pollution sources within San Jose compared with Bernalillo County. Finally, I will provide data on age-adjusted mortality rates for the 50 leading causes of disease and life expectancy for the San Jose neighborhood, with a comparison to Bernalillo County as a whole. Mortality and life expectancy data is based on data collected from the New Mexico Department of Health's Indicator-Based Information System. I will offer the opinion that the San Jose neighborhood is predominantly low-income and minority, and bears a higher proportion of air pollution sources and disease burden, and experiences lower life expectancy than other neighborhoods in Bernalillo County.

B. Demographic and Socioeconomic Data

When comparing Bernalillo County's minority population with that of census tracts 13.00 and 40.01, Bernalillo County's Hispanic or Latino population (of any race) is comprised of 47.9%, while the percentages of Hispanic or Latino population in census tracts 13.00 and 40.01 are 88% and 71%, respectively. Further, Bernalillo County's non-Hispanic white only population percentage is 41.5%, compared with the non-Hispanic white only population percentages for census tracts 13.00 and 40.01of 6% and 24%, respectively (*see*, Figure 1).

Demographic Data for Bernalillo County, Census Tract 13.00 and Census Tract 40.01 (Source: Profile of General Population and Housing Characteristics 2010, 2010 Demographic Profile)

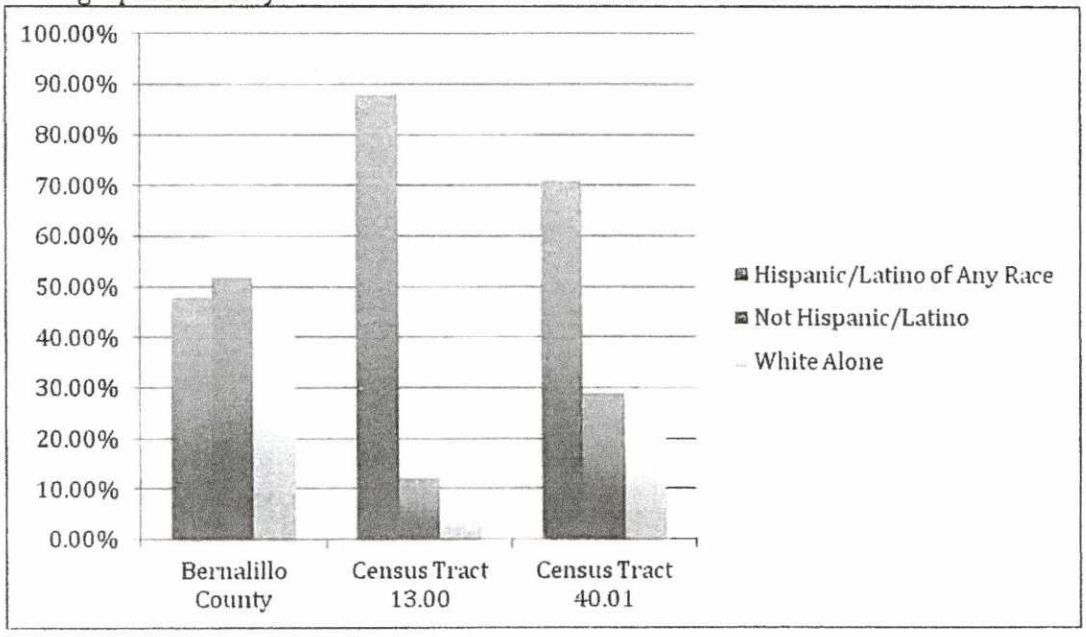


Figure 1

I reviewed the following U.S. Census data regarding the socioeconomic make-up of San Jose and Bernalillo County. When compared with Bernalillo County's unemployment rate of 5.4%, census tracts 13.00 and 40.01 that underlie the San

Jose neighborhood, exhibit an unemployment rate of 17.8% and 16.8%, respectively. When compared with Bernalillo County's percentage of people living below the Federal Poverty Level of 18%, census tracts, 13.00 and 40.01 exhibit percentages of people living below the Federal Poverty Level of 37.1% and 29.3%, respectively. Further, when compared with Bernalillo County's percentage of children under the age of 18 living below the Federal Poverty Level of 25.6%, census tracts 13.00 and 40.01 exhibit percentages of children under the age of 18 living below the Federal Poverty Level of 47.1% and 41.9%, respectively (*see*, Figure 2).

Socioeconomic Data for Bernalillo County, Census Tract 13.00 and Census Tract 40.01 (Source: 2009-2013 American Community Survey 5-year Estimates, Selected Economic Characteristics)

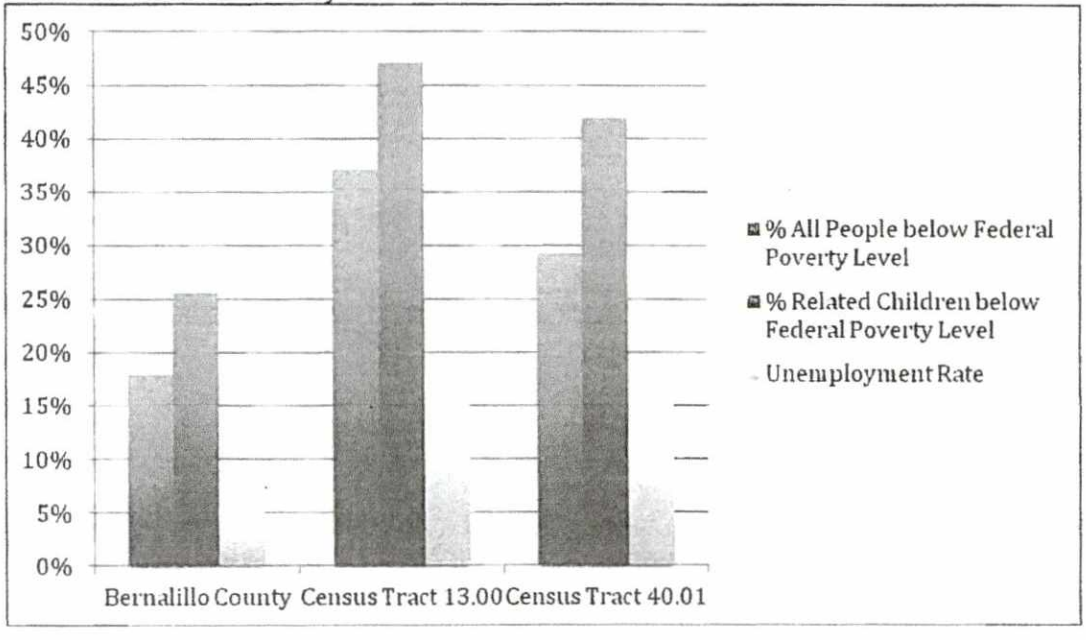


Figure 2

Based on my review of the data, I have concluded that the San Jose neighborhood has a higher proportion of low-income and minority residents than Bernalillo County.

C. Pollution Source Concentration

I reviewed the following publically available information regarding the concentration of air pollution sources in the San Jose neighborhood relative to the rest of Bernalillo County, *Pollution Permits and Sites*; available at: http://nmcdc.maps.arcgis.com/home/webmap/viewer.html?webmap=03a2f2d4e19f41378d9c5e511c7e6ffc, accessed on April 2015. The map illustrates the locations of permitted air emissions as of 2012 by the following types of air emissions: particulate matter less than 10 microns, particulate matter less than 2.5 microns, and volatile organic compounds. Based on an overlay of permitted air emissions sources and the proportion of non-Hispanic white population, it appears the census tracts underlying the San Jose neighborhood are disproportionately impacted by the number of sources of particulate matter and volatile organic compounds emissions when compared with the remainder of Bernalillo County. Further, areas having a higher percentage of families with children living in poverty appear to be more burdened with sources of air emissions than areas of Bernalillo County having a lower percentage of families with children living in poverty. Based on my review of the foregoing information, I conclude that the San Jose neighborhood contains a disproportionate number of sources of air pollution, exhibits a higher percentage of families with children living in poverty, and has a lower proportion of non-Hispanic whites when compared with the rest of Bernalillo County.

D. Disparate Health Impacts

Poverty has a strong influence on health. According to the publication, *Place Matters for Health in Bernalillo County*, nationally families living below the federal poverty level are 3.6 times more likely to report fair or poor health than those with incomes at least twice the poverty level (Joint Center for Political and Economic Studies, 2012). Map 5 on page 8 of the above report illustrates persistent poverty by census tract. A copy of that map is attached as SWOP Exhibit 1.B. Residents living in census tract 13.00, underlying the San Jose neighborhood, have experienced persistent poverty since 1970. Census tract 13.00 is one of only six of Bernalillo County's 141 census tracts that share this characteristic. The age-adjusted death rate from the 50 leading causes of death for Hispanics living in Bernalillo County was 744 persons per 100,000 persons for 2011; for residents of census tracts 13.00 and 40.01, the age-adjusted death rate from the 50 leading causes of death for Hispanics was 1,842 persons per 100,000 persons. Life expectancy from birth for Bernalillo County was 78.6 years in 2011, while for the census tracts underlying the San Jose neighborhood the life expectancy was 68.5 years in 2011.

E. Conclusions

Based on my review of the above data, I have reached the following conclusions:

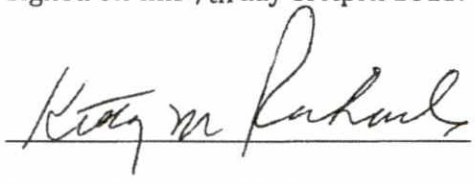
1. The San Jose neighborhood, when compared with Bernalillo County, has a significantly higher population of low-income and minority residents;

2. There are a disproportionate number of air pollution sources in the San Jose neighborhood, compared to Bernalillo County as a whole;

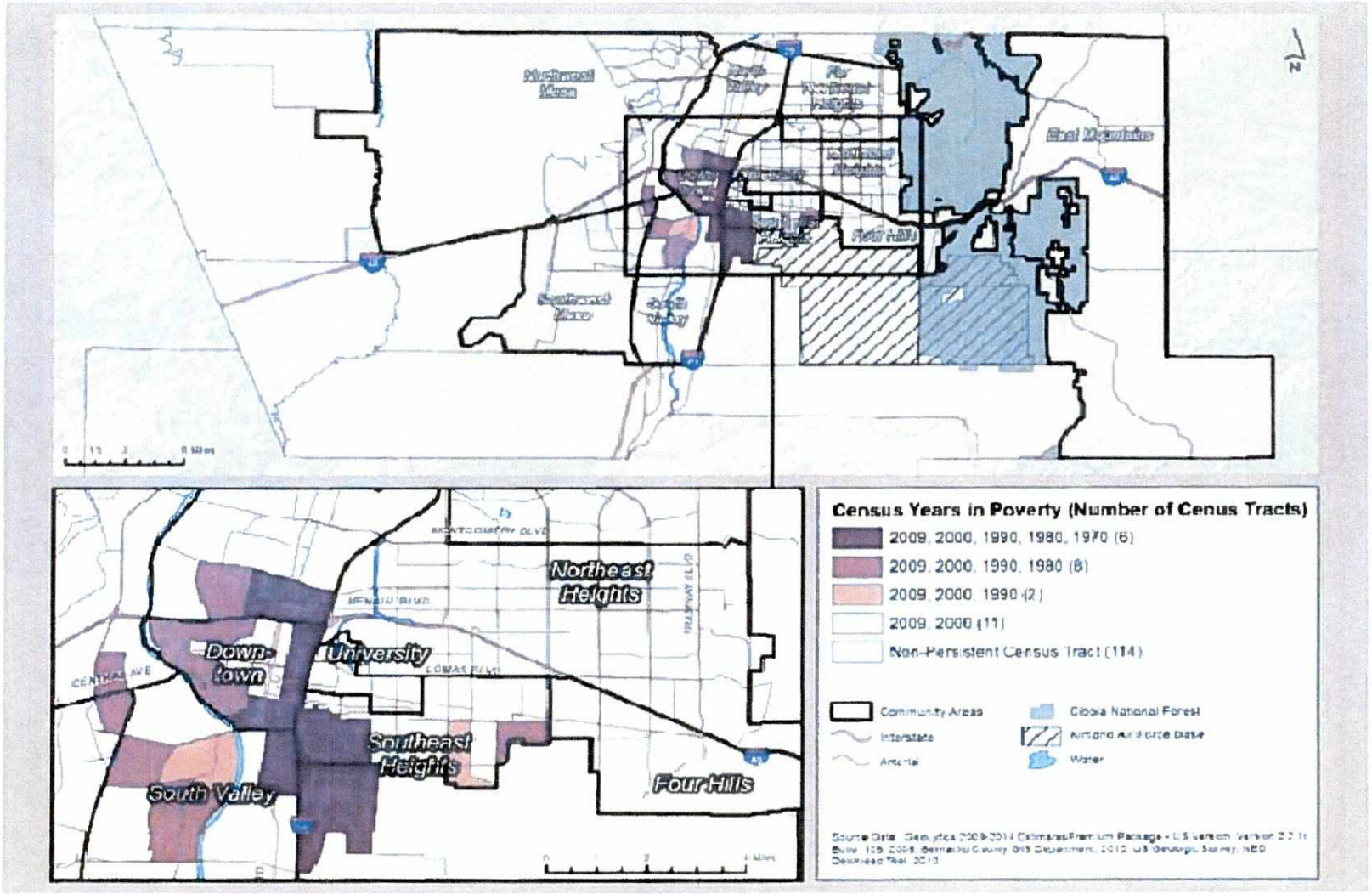
3. Because of the disproportionate number of air pollution sources in the San Jose neighborhood, the residents of San Jose bear a disproportionate risk of disease from air pollution.

I declare under penalty of perjury, that the foregoing is true and correct to the best of my knowledge and belief.

Signed on this 7th day of April 2015.



Kitty M. Richards, MPH, MS



SWOP Exhibit 1.B

STATE OF NEW MEXICO
Before the
ALBUQUERQUE-BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD

IN THE MATTER OF THE PETITION FOR
A HEARING ON THE MERITS REGARDING
AIR QUALITY PERMIT NO. 3131 [Honstein Oil]

Written Testimony of Dr. George D. Thurston

April 6, 2015

I, George D. Thurston, do hereby swear and affirm that the following is true to the best of my knowledge. I am qualified and competent to give this declaration, and the factual statements herein are true and correct to the best of my knowledge, information and belief. The opinions expressed herein are based on my best professional judgment.

I. Name and Title

My name is George D. Thurston, and I am a Professor of Environmental Medicine, and Director of the Program in Exposure Assessment and Health Effects, at the New York University School of Medicine's Department of Environmental Medicine.

II. Education and Experience

I received Bachelor's degrees in Environmental Engineering and Environmental Studies from Brown University in Providence, Rhode Island. I received my Master's and Doctorate degrees in Environmental Health Science from Harvard University in Cambridge, Massachusetts. I received post-doctoral training at the Harvard University, Kennedy School of Government, in Environmental Epidemiology. My educational experience is fully summarized in my *Curriculum Vitae*, attached as SWOP Exhibit 2.A.

SWOP Exhibit 2

I am currently a tenured professor at New York University's School of Medicine, Department of Environmental Medicine in New York City. In addition to my teaching and mentoring responsibilities, I am also Director of the Program in Exposure Assessment and Health Effects.

I conduct extensive research on the health effects of air pollution. My research has included leading a study in the South Bronx on the acute morbidity effects of particulate matter on children with asthma. I have also collected and analyzed air pollution exposure data in the wake of the World Trade Center collapse in 2001, and led the NYU School of Medicine's community outreach program that shared that information with the public.

I have published extensively in peer-review journals on the health effects of ambient air pollution. Some of my published articles include: *A multi-year study of air pollution and respiratory hospital admissions in three New York State metropolitan areas: Results for 1988 and 1989 summers*. 2 J. Exposure Anal. and Environ. Epidemiol. 429-450 (1992); *The nature and origins of acid aerosol pollution measured in Metropolitan Toronto, Ontario*, 65 Environ. Res. 254-270 (1994); *Measurement methods to determine compliance with ambient air quality standards for suspended particles: Discussant*. 45 J. Air & Waste Manage. Assoc. 667-668 (1995); *The health benefits of the U.S. EPA clean air standards*. 16 Pace Environmental Law Review 1 (1998). A complete list of my publications is in my attached CV. In addition to publishing articles, I regularly review articles for peer-review publications including: *Journal of the American Medical Association* (1996 - present); *Journal of Exposure Analysis and Environmental Epidemiology* (1993 - present); *Environmental Health Perspectives* (1995 - present). A full list of my editorial contributions is on pages 4-5 of SWOP Exhibit 2.A.

Finally, I have made numerous presentations on the health impacts of air pollution to regional, national and international governmental bodies, trade associations, and professional associations. These include invited testimony before committees of both the United States House of Representatives and Senate, presentations to the New York Department of Health, Pace Law School, the United States Environmental Protection Agency, the American Lung Association, the American Chemical Society, the International Society for Environmental Epidemiology and the World Health Organization. A complete list of my presentations is in my attached CV.

III. Materials Reviewed

In preparing the foregoing testimony, I reviewed the following materials:

1. Air Quality Authority to Construct Permit No. 3131;
2. Application materials for Air Quality Permit No. 3131 in administrative record;
3. Administrative Record, Permit No. 3131;
4. Western Refining Terminals, Permit No. 456-M4-RV2, Albuquerque Products Terminal 2012 Emissions Inventory;
5. VECENERGY Albuquerque Terminal 2011 Emissions Inventory, Permit No. 47-M1-RV2;
6. U.S. Environmental Protection Agency 2005 National Air Toxics Assessment;
7. U.S. Environmental Protection Agency Mobile Source Air Toxics master list;
8. U.S. Environmental Protection Agency Integrated Risk Information System database;

9. Health Effects Institute, Special Report #16;

10. New York State Department of Environmental Conservation, Policy DAR-1: Guidelines for the Control of Toxic Ambient Air Contaminants, Appendix C (Annual Guideline Concentrations/Short-Term Guideline Concentrations) (2014);

11. California Office of Environmental Health Hazard Assessment, Acute, 8 hour, and Chronic Reference Exposure Levels (2014); and,

12. Other materials listed in "Literature Cited" section, below.

IV. Air Quality and Health Impacts

Volatile organic compounds (VOCs) consist of a broad spectrum of chemicals in the human environment produced by various industrial processes, volatilized into the air from petroleum products (e.g., gasoline and diesel fuels), exhausted by mobile transportation sources and generated by cigarette smoking in the indoor air. Oil and natural gas storage facilities, such as the applicant Honstein facility, as well as gasoline and diesel combustion by on- and off-road mobile sources associated with such facilities, are major sources of VOCs, such as Benzene (e.g., *see* Figure 1). There is growing concern that VOC exposures, known to contribute to wide variety of cancers among exposed individuals, may also contribute to ill respiratory health by exacerbating asthma attacks and other adverse respiratory effects.

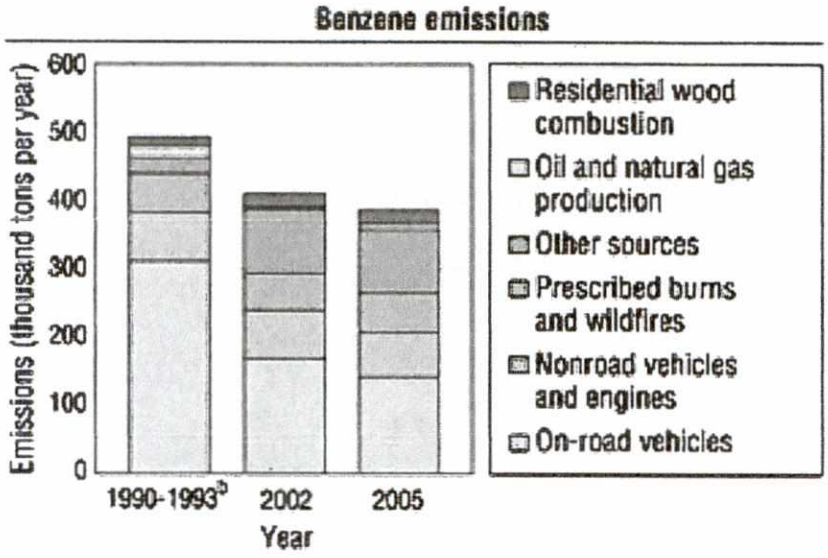


Figure 1. US Air Emissions of Benzene (from US EPA, Air Toxics Emissions)

http://cfpub.epa.gov/eroe/index.cfm?fuseaction=detail.viewPDF&ch=46&lShowInd=0&subtop=341&lv=list.listByChapter&r=216616

Exposures to VOCs

Baseline exposure information of VOCs in the U.S. population was carried out first by the Total Exposure Assessment Methodology (TEAM) studies of the U.S. Environmental Protection Agency (U.S. EPA) between 1979 and 1987. Later several population-based studies confirmed the wide-spread pattern of VOCs exposure and their ubiquitous presence in various home and workplace settings (e.g., Chan et al, 1991).

The next phase of the growing scientific evidence and understanding on how VOCs affect U.S. communities was based on the National Health and Nutrition Examination Survey 1999-2000 subsamples of 636 adults (Symanski et al., 2009). Exposure information was collected by personal VOC monitor badges and the measured values were controlled for age, gender, education, race/ethnicity, income and presence of smoking. Results demonstrated that Hispanics had significantly increased exposure to benzene, and had increased exposures to all other VOCs measured (toluene, ethylbenzene, m,p-xylene, o-

xylene) even though the differences was not statistically significant when compared them to other ethnic groups.

More recently, the U.S. EPA has conducted air modeling to estimate the ambient levels of VOCs for every Census Tract in the US, allowing an assessment of the prevailing levels of VOCs. Table 1 shows the comparative levels of key VOC's, called MSATs (Mobile Source Air Toxics) estimated by the U.S. EPA, in two different Census Tracts in Bernalillo County, New Mexico. The first Census Tract (001300) includes much of the San Jose neighborhood that will be affected by the applicant Honstein facility, and has relatively high levels of the all the various MSATs. Tract 003731, to the northeast of San Jose neighborhood, in contrast, is much wealthier, and has much lower prevailing levels of the EPA MSAT pollutants. The relative locations of these two Census Tracts are shown in Figure A1 in the Appendix to this submission. All of these EPA identified air toxics of concern are increased over the other nearby Census Tract by a factor of 2 (a doubling) or more, with the greatest increases in emissions at Census Tract 001300 being for Diesel, Particulate Matter (PM), Napthalene, and overall Polycyclic Aromatic Hydrocarbons (PAH) compounds. Clearly, based on these EPA estimates, the location for this Honstein facility is an underserved minority community that is already suffering greater exposures to ALL OF these air toxics than more advantaged areas in the very same county. Thus, in addition to health concerns, this proposal raises equity concerns, in which more environmental insult is being added to those least able to deal with them, given their limited incomes and already high prevailing air toxics burden.

Table 1, Prevailing Mean VOC Concentrations in Bernalillo County Census Tracts 1300 and 3731

Pollutant	Tract 001300	Tract 003731	1300/3731 Ratio
Acrolein (µg/m3)	0.046	0.016	2.917
Benzene (µg/m3)	1.521	0.705	2.157
1,3-Butadiene (µg/m3)	0.089	0.044	1.994
Diesel PM (µg/m3)	2.060	0.426	4.841
Formaldehyde (µg/m3)	1.901	1.161	1.638
Napthalene (µg/m3)	0.074	0.017	4.384
PAH POM (µg/m3)	0.012	0.002	6.944
Median Family Income ($)	$25,929	$132,202	0.196

Sources: USEPA NATA Database. http://www.epa.gov/ttn/atw/nata2005/
US Census: http://www.usa.com/NM001001300.html;
http://www.usa.com/NM001003731.html

DETAILED EXPOSURE AND HEALTH EFFECT INFORMATION ABOUT THE MOST IMPORTANT VOC TOXICANTS

Benzene

Benzene (C_6H_6) is a clear, colorless, volatile, highly flammable liquid with a characteristic odor. Inhalation is the primary route of exposure for general and occupational populations, and exposure to benzene in the general population occurs primarily from gasoline vapors, tobacco smoke, and automotive emissions (Wallace, 1996). Benzene is produced in extremely large quantities (14.8 million metric tonnes in 1993) worldwide (WHO, Environmental Health Criteria, 1998). Emissions arise during the processing of petroleum products, in the coking of coal, during the production of toluene, xylene and other aromatic compounds, and from its use in consumer products, as a chemical intermediate and as a component of gasoline. According to the Health Effects Institute (HEI) Special Report #16 (2007), mobile sources are an important component of overall exposure to benzene, with the highest concentrations being found at urban roadside and urban in-vehicle locations.

There is much more ambient air-monitoring data for benzene than for other priority mobile source air toxics (MSATs).

Benzene's known health effects

Benzene is a known carcinogen. Both epidemiologic studies and case studies provide clear evidence of a causal association between exposure to benzene and leukemia. Specifically, high benzene exposure is related to acute myeloid leukemia and recently, myelodysplastic syndrome has been observed at low benzene exposure levels as well (Collins et al, 2015, Schnatter et al., 2012). These human data are supported by animal studies. Based on this cumulative evidence, benzene is characterized as a known human carcinogen - EPA's strongest statement on scientific evidence to support carcinogenic risk association (AASHTO, 2007).

Experimental evidence shows the oxidation of benzene by CYP2E1 in the liver as the first step in initiation of benzene toxicity (Sammett et. al., 1979; Valentine et. al., 1996). As summarized in the EPA Integrated Risk Information System (IRIS) (2002), hematotoxicity has been consistently reported to be "the most sensitive indicator of non-cancer toxicity in humans and experimental animals, with bone marrow as the principal target organ". Among several epidemiologic (mostly occupational) studies, decrease in absolute lymphocyte count (ALC) was observed to be the most sensitive indicator of benzene exposure. Benzene-induced hematotoxicity has been well described in the literature, and the observed hematological effects are found for both short-term and long-term exposures (EPA IRIS, 2002). Acute exposure to very high concentrations of benzene is also associated with severe damage to the blood-forming elements of the bone marrow. The most sensitive effect observed in humans is decreased lymphocyte blood count (Rothman et. al., 1996). More recent studies of workers exposed to benzene at concentrations as low as 0.82

milligrams per cubic meter (mg/m^3) have also shown reductions in bone-marrow production of blood cells, including red blood cells (Qu et. al. 2002). Several epidemiological studies, mostly in occupational settings, have also shown chronic exposure to benzene results in progressive deterioration of hematopoietic function (EPA IRIS, 2002).

Non-cancer related effects of benzene exposure associated with alterations in cells of the lungs, altered functions of immune system macrophages and basophil lymphocytes known to be increased in asthma and induce atopy among sensitive humans (Triggiani et. al. 2011).

Furthermore, new molecular epidemiological research shows that human genetic material can be directly altered by benzene exposure (Terry et. al., 2011). Even low-dose benzene exposure was associated with decreased methylation of LINE-1 and Alu repeated element sequences of the white blood cell genomes that are indicative an overall downregulation known to be specific to tumor progression (Bollati et. al., 2007), indicating increased cancer risk with exposure.

Acrolein

Acrolein (C3H4O) is a volatile aldehyde that is also known as 2-propenal. It is an oxidizing and electrophilic chemical that is highly reactive in air, with a half-life in the atmosphere of only approximately 1 day (HEI, 2007). Acrolein is a common air pollutant that is present in high concentrations in wood, cotton, and tobacco smoke, automobile exhaust and industrial waste and emissions. Exposure to acrolein occurs through exposure to environmental pollutants such as tobacco smoke and automobile exhaust. As shown in Table A1, the EPA long-term average exposure Reference Air Concentration (RfC) for acrolein is 0.02 micrograms per cubic meter ($\mu g/m^3$) (EPA 2003), based on a human equivalent concentration lowest observed adverse effect level (LOAEL [HEC]) of 20 $\mu g/m^3$

for nasal lesions in rats exposed for 13 weeks (Feron et al. 1978). The EPA confidence level in this RfC estimate is "Medium", which is the same level of confidence as the other priority MSATs for which EPA provides an RfC. Of the five MSATs for which the EPA provides an RfC, acrolein has the lowest value by two orders of magnitude. Similarly, Table A2 shows that the New York Air Guide has the lowest (most protective) Annual Guidance Concentration (AGC) non-cancer limit for acrolein (.35 $\mu g/m^3$) as well, but by a factor of about 8 versus the next lowest (on a per mass basis) of the only other non-cancer MSAT AGC provided by New York State (i.e., naphthalene at 3 $\mu g/m^3$). Finally, the State of California is the only regulatory source that provides a long-term non-cancer guideline concentration for all seven MSATS, and it also indicates that acrolein has the greatest non-cancer risk of adverse health effects per $\mu g/m^3$, but by a factor of about 14 versus diesel particulate matter (DPM), and a factor of 25 compared with the compound with next highest risk per $\mu g/m^3$, formaldehyde. *Overall, using the various guidance limits set by the EPA, California, and New York State as indicators, acrolein has the largest of the non-cancer health risks from long-term exposure to the seven MSATS, per $\mu g/m^3$, by a factor ranging from one to two orders of magnitude.*

The short-term exposure guideline concentration for acrolein, provided by both New York State (Short-term Guidance Concentration, SGC) and California (Acute Inhalation Guideline), is 2.5 $\mu g/m^3$. As was the case for long-term exposures, of those compounds for which a guideline is provided by these two states, acrolein has the lowest guideline concentration. In the case of New York State's SGC, the next most toxic compound provided is formaldehyde, which has a 30 $\mu g/m^3$ limit, indicating a toxicity one-twelfth that of acrolein. In California, the formaldehyde Acute Inhalation guideline is 50 $\mu g/m^3$, indicating that acrolein is approximately 20 times more toxic than formaldehyde. This comparison is

especially relevant, as both of these two compounds' guideline concentrations are based on human studies.

It should be noted that DPM is a form of PM 2.5, so it's 24-hour average National Ambient Air Quality Standard (NAAQS) of 35μg/m^3 would suggest a short-term guideline of 35μg/m^3, indicating acrolein to be on the order of (35/2.5=) 14 times lower than DPM, if DPM is no more toxic than other PM. When compared to the MSAT with the highest allowable guideline concentration provided by New York State (7,900 μg/m^3 for naphthalene), acrolein would be more than 3000 times lower. Thus, assuming that the size of the allowable guideline concentrations indicate the relative toxicities of these various compounds, acrolein guideline concentration limit ranges from a factor of roughly 12 to 3000 lower than the other priority MSATs, depending on the MSAT chosen for comparison, indicating its high toxicity, relative to other MSATs.

Acrolein's known health effects

Acrolein has been linked to the activation of the coagulation and hemostasis pathways and thereby to the predisposition of thrombotic events in humans (Sithu et. al., 2010). Thrombotic events are associated with formation of blood clots within blood vessels. Blood clot formation increases the risk of stroke and heart attack.

Inhalation is the main route of exposure to acrolein in exposed communities. The inhalation of such a reactive gas can lead to severe damage of the airways and lung, compromising the function of the respiratory system. The major toxicological properties of acrolein are that it is extremely irritating to the lung, and that it binds irreversibly to the tissues of the respiratory tract when inhaled, so inhaled acrolein does not distribute efficiently to other organs. TRPA1, a TRP ion channel expressed in chemosensory C-fibers, is activated by almost all oxidizing and electrophilic chemicals, including acrolein. Sensory

channels such as TRPA1 are essential for maintenance of airway inflammation in asthma, and this may contribute to the progression of airway injury following acrolein exposure (Bessac, 2010).

Although acrolein might cause DNA damage, bioassays haven't provided evidence of carcinogenicity. As a reactive electrophile, acrolein seems likely to disrupt many biochemical pathways, but the Agency for Toxic Substances and Disease Registry (ATSDR) indicates that no studies have reported genotoxic effects of acrolein in humans or animals by any route of exposure (ATSDR 2005). However, Thompson and Burcham (2008) did find a gene transcription response to acrolein. Despite that new information, the International Agency on Research for Cancer (IARC) has stated that there is inadequate evidence available on the carcinogenicity of acrolein in laboratory animals; therefore acrolein is not currently classified as a known carcinogen in humans (e.g., IARC 2006).

1,3 Butadiene

1,3-Butadiene is a colorless gas present in gasoline. It is processed from petroleum, and according to the ATSDR Toxicology Factsheets (ToxFAQs), about 60% of the manufactured 1,3-butadiene is used to make synthetic rubber, although 1,3-butadiene is present in gasoline and its presence is not limited to rubber manufacturing. 1,3-Butadiene is also used to make plastics, including acrylics, synthetic clothing materials (ATSDR, 2007).

Given that a No Observed Adverse Effect Level (NOAEL) has not been clearly identified, no threshold can be assumed, and 1,3-butadiene may be a hazard at ambient concentrations. The specific mechanisms of 1,3-butadiene-induced carcinogenesis are unknown; however, the scientific evidence strongly suggests that the carcinogenic effects are mediated by genotoxic metabolites of 1,3-butadiene, i.e., the monoepoxide, the diepoxide, and the epoxydiol (EPA IRIS, 2002).

Epidemiological studies are unlikely to demonstrate the hazards of this air toxic, as the relevant health outcomes (e.g., reproductive endpoints) are uncommon and community exposure to 1,3-butadiene is almost always associated with co-exposure to other agents from the same sources, principally emissions from traffic and tobacco smoke. Estimates of community effect could be extrapolated from the exposure–response relationships determined for occupationally exposed cohorts (e.g., styrene-butadiene rubber workers). However, these estimates rely on a variety of assumptions about the magnitude and slope of the exposure–response relationship. The HEI Special Report #16, in its assessment, additionally suggests the possibility of subgroups that are especially sensitive to 1,3-butadiene because of age or possible genetic polymorphisms in the genes involved in 1,3-butadiene metabolism, or because of combined exposures from a number of sources.

Non-cancer risk assessments by both the U.S. EPA and California EPA have relied on the evidence of reproductive and developmental effects in mice, including testicular and ovarian atrophy (NTP, 1993). Based on this information, an inhalation reference concentration (RfC) of 2 $\mu g/m^3$ was recommended, based on a benchmark concentration of 1.94 - 103 $\mu g/m^3$ for ovarian atrophy and an uncertainty factor of 1000 (EPA 2002b,c). The overall confidence in the assessment is medium. Compared to the other priority MSATs of interest, based on mass concentration, 1,3-butadiene is found to be a health risk at relatively low concentrations.

1,3 Butadiene's known health effects

Reproductive and developmental effects have been observed in mice exposed to 1,3-butadiene by inhalation (U.S. EPA, 2002, Chapter 5). The most critical effect found among toxicological studies of 1,3-Butadiene studying chronic inhalation exposure was ovarian atrophy in female mice and testicular atrophy in male mice. However, similar effects

were not observed in rats, and there are no human data on reproductive or developmental effects. Few adverse non-cancer effects, other than reproductive and developmental effects, have been observed, except for hematological effects in mice exposed to higher concentrations (U.S. EPA, 2002, Section 6.1).

The modes of action for human leukemia and for the observed solid tumors in rodents are both likely related to the genotoxic potencies for one or more of these metabolites. A number of factors related to metabolism can also contribute to nonlinearity in the dose-response relationship, including enzyme induction and inhibition, depletion of tissue glutathione, and saturation of oxidative metabolism. The EPA IRIS identifies 1,3-Butadiene as a "known human carcinogen based on sufficient evidence of carcinogenicity in animals." The American Association of State Highway and Transportation Officials (AASHTO) Report (2007) also identifies 1, 3-butadiene as carcinogenic to humans by inhalation.

Formaldehyde

Formaldehyde, also known as methanal, is a colorless gas having a strong, irritating odor. It is ubiquitous in the environment, as a result of both natural and human processes. In rats, inhalation exposure to formaldehyde induced squamous-cell carcinomas of the nasal cavity. There are no EPA standards for acute exposures to formaldehyde. New York SGC and California acute inhalation guidelines are set at 30 $\mu g/m^3$ and 55 $\mu g/m^3$, respectively, and if these mass standards are compared with other priority MSATs with similar guidelines, the concentration standards for formaldehyde are in the mid-range (e.g., the New York SGC for acrolein is 2.5 $\mu g/m^3$ and for naphthalene is 7900 $\mu g/m^3$). According to EPA guidelines, there is limited evidence of carcinogencity.

Formaldehyde's Known health effects

Reported health effects of formaldehyde exposure are rare at concentrations below 0.36 mg/m^3 (HEI Special Report #16, 2007). More than 90% of inhaled formaldehyde gas is absorbed and rapidly metabolized to formate in the upper respiratory tract. Given that formaldehyde is highly reactive, acute exposure is known to cause irritation in tissues it that comes in direct contact, such as the eyes, nose and upper respiratory system (ATSDR, 2008). At high concentrations, formaldehyde can cause asthmatic reactions by way of an irritant mechanism. Since inhaled formaldehyde is rapidly metabolized, and mostly detoxified, on contact with the respiratory tract, it is not expected to target other distant organs (e.g., reproductive organs) and cause systemic damage. Ambient concentrations of formaldehyde are generally lower than those that cause irritation of the eyes and respiratory system. However, concentrations in certain outdoor environments, such as near roadways, can approach those at which sensitive people experience irritation.

Epidemiologic studies have reported several other possible effects (e.g., asthma, neurobehavioral effects, histological changes in the nasal epithelium), but the evidence for a causal relationship is insufficient. Effects of long term-exposures to low formaldehyde concentrations on cancer, asthma, and other endpoints are not understood. The IARC has classified formaldehyde as "an established human carcinogen" (IARC 2006). The IARC review indicated that there is "sufficient epidemiologic evidence that formaldehyde causes nasopharyngeal cancer in humans, that there is strong but not sufficient evidence of a causal association between leukemia and occupational exposure to formaldehyde, and only limited epidemiologic evidence that formaldehyde causes sino-nasal cancer in humans."

Naphthalene

Naphthalene, also known as tar camphor, is a slightly water-soluble, two-ring aromatic hydrocarbon. Fossil fuels, such as petroleum and coal, contain naphthalene. It is

the most volatile member of the polycyclic aromatic hydrocarbons, and inhalation is the principal pathway of exposure (Preuss et. al. 2003). The EPA IRIS Rfc for napthalene is 3μg/m^3, and New York AGC is likewise set at 3 μg/m^3. Compared to the EPA mass standards for the other priority MSATs, this falls in the middle of the range, but among the New York standards this represents the highest (least restrictive) mass concentration guideline. The New York SGC is extremely high and set at 7900 μg/m^3. These extreme levels are not expected in ambient settings. There are no napthalene guidelines set for cancer risk.

Naphalene's known health effects

The toxicity of naphthalene results from its reactive metabolites via cytochrome P450 enzymes. The toxicity of inhaled naphthalene has been shown to be greatest in the nasal cavity and in the Clara cells of the airways. These sites are also the location of high concentrations of cytochrome P450 enzymes, capable of oxidizing naphthalene to its reactive forms, and of the cellular systems with the highest rate of glutathione depletion. According to the HEI Special Report 16 assessment of Napthlene, most of the available evidence of toxicity of this MSAT is from animal studies of both cancer and non-cancer effects. Animal studies have shown that exposure to naphthalene causes damage to the respiratory tract, including chronic nasal inflammation, metaplasia of the olfactory epithelium, and hyperplasia of the respiratory epithelium. Naphthalene is metabolized to reactive intermediates.

There are no epidemiology studies of naphthalene, and human studies are therefore limited to case studies where exposure to high concentrations of naphthalene induced methemoglobinemia (changes and decrease in the amount of oxyhemoglobin in the red blood cells, which lowers available oxygen in the circulatory system) and hemolysis (this is

not seen in rodents). Hemolysis is a condition when red blood cells became damaged due to toxic compounds or certain drug exposures and release hemoglobin into the blood stream. That results in fast oxygen loss of the body as red blood cells do not transport the necessary oxygen amount to the tissues (brain, muscles, etc.). For example, hemolysis was observed in infants exposed to clothing and bedding that had been stored with naphthalene mothballs. However, no quantitative information on exposure concentrations was available in these cases, and hence they cannot be used to establish a NOAEL or LOAEL for this effect on health. There is no information available on the reproductive or developmental effects of naphthalene exposures in humans, and genotoxicity tests of naphthalene are generally not found.

In mice, naphthalene causes lung and respiratory system damage to both ciliated and Clara cells of the bronchiolar epithelium. Its toxicity is associated with naphthalene metabolism by cytochrome P450 enzymes, which is concentrated in Clara cells that are present in higher amounts in cells of mice than of rats or humans. Therefore, the respiratory tract of humans is likely to be much less sensitive to naphthalene than that of mice and rats. The genotoxic effects of naphthalene are at present unclear. Although there is little evidence for the induction of gene mutations by naphthalene, there are indications of a clastogenic (chromosome breakage) potential. There is limited evidence from animal bioassays that naphthalene can cause cancer, but it is not clear how to extrapolate these results to humans. Both the National Toxicology Program (NTP) and the IARC concluded that the evidence for naphthalene carcinogenicity in humans is inadequate. According to the HEI Special Report #16, humans might be less sensitive than rodents to toxic and carcinogenic effects of naphthalene because humans are less efficient at naphthalene oxidation.

V. Conclusions

From the above considerations, it is clear that the above noted VOCs are associated with increased risk of adverse health effects, and are emitted by the kinds of industry (and associated traffic) that is prevalent in San Jose and adjacent neighborhoods. Importantly to this proceeding, such VOC's are also associated with Honstein's operations under review. As documented here, the VOC levels in the Census Tract where this facility is operated are much higher than seen in more affluent nearby areas of the same county. Thus, the approval of this facility would add to an already higher VOC air pollution health risk to community members in this already underserved and disadvantaged community.

I declare under penalty of perjury, that the foregoing is true and correct to the best of my knowledge and belief.

Signed on this 6th day of April 2015.

George D. Thurston, Sc.D.

Literature Cited

AASHTO (American Association of State Highway and Transportation Officials). Analyzing, Documenting, and Communicating The Impacts of Mobile Source Air Toxic Emissions in the NEPA Process (March 2007).

ATSDR (Agency for Toxic Substances and Disease Registry). 2007. Toxicological Profile for 1,3-Butadiene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

ATSDR (Agency for Toxic Substances and Disease Registry). 2008. Toxicological Profile for Formaldehyde. (Draft for Public Comment). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Bessac BF, Jordt SE. (2010) Sensory detection and responses to toxic gases: mechanisms, health effects, and countermeasures. Proc Am Thorac Soc. 2010 Jul;7(4):269-77. Review.

Chan CC, Spengler JD, Ozkaynak H, Lefkopoulou M. (1991) Commuter exposures to VOCs in Boston, Massachusetts. J Air Waste Manage Assoc. 1991 Dec;41(12):1594-600.

HEI Special Report #16. 2007. Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects. A Special Report of the Institute's Air Toxics Review Panel (Executive Summary). November 2007. *www.healtheffects.org*

Health Effects Institute (HEI) (2010). Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. Special Report 17, 2010-01-12, Boston, MA

IARC (International Agency for Research on Cancer). 2006. IARC Monographs of the Evaluation of Carcinogenic Risks to Humans. Formaldehyde, 2-Butoxyethanol and 1-*tert*-Butoxy-2-ol. Vol 88. World Health Organization, Lyon, France. Summary available from *http://monographs.iarc.fr/ENG/Monographs/vol88/volume88.pdf*

NTP (National Toxicology Program), U.S. Department of Health and Human Services. (1993) Toxicology and carcinogenesis studies of 1,3-butadiene (CAS No. 106-99-0) in B6C3F1 mice (inhalation studies). NTP TR 434, NIH Pub. No. 93-3165. Research Triangle Park, NC.

Preuss R, Angerer J, Drexler H. 2003. Naphthalene—an environmental and occupational toxicant. Int Arch Occup Environ Health 76(8): 556–76.

Qu Q, Shore R, Li G, et al. 2002. Hematological changes among Chinese workers with a broad range of benzene exposures. Am J Ind Med 42(4):275-285.

Rothman, N., G.L. Li, M. Dosemeci, W.E. Bechtold, G.E. Marti, Y.Z. Wang, M. Linet, L.Q. Xi, W. Lu, M.T. Smith, N. Titenko-Holland, L.P. Zhang, W. Blot, S.N. Yin, and R.B. Hayes.

1996. Hematotoxicity among Chinese workers heavily exposed to benzene. Am. J. Ind. Med. 29: 236-246.

Sammett D, Lee EW, Kocsis JJ, Snyder R (1979) Partial hepatectomy reduces both metabolism and toxicity of benzene. J Toxicol Environ Health 5: 785-92.

Sithu SD, Srivastava S, Siddiqui MA, Vladykovskaya E, Riggs DW, Conklin DJ, Haberzettl P, O'Toole TE, Bhatnagar A, D'Souza SE. (2010). Exposure to acrolein by inhalation causes platelet activation. Toxicol Appl Pharmacol. 2010 Oct 15;248(2):100-10. Epub 2010 Aug 3.

Thompson CA, Burcham PC. (2008) Genome-wide transcriptional responses to acrolein. Chem Res Toxicol. 2008 Dec;21(12):2245-56.

U.S. Environmental Protection Agency (U.S. EPA). 2000. Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements; Final Rule. 40 CFR Parts 80, 85, and 86. Fed Regist 65:6747–6796.

U.S. Environmental Protection Agency (U.S. EPA). 2002a. Health Assessment Document for Diesel Engine Exhaust. EPA/600/8-90/057F. NTIS PB 2002-107661. National Center for Environmental Assessment, Washington, DC. Available from *http://cfpub2.epa.gov/ncea/*.

U.S. Environmental Protection Agency (U.S. EPA). (2002b) Health assessment document for 1,3-butadiene. Office of Research and Development, Washington, DC. EPA/600/P-98/001.

US EPA (IRIS). TOXICOLOGICAL REVIEW OF BENZENE (NONCANCER EFFECTS) October 2002. www.epa.gov/iris

US Environmental Protection Agency (US EPA). Technology Transfer Network: 1996 National Air Toxics Assessment Exposure and Risk Data. Available from: http://*www.epa.gov/ttn/atw/nata/ted/exporisk.html*

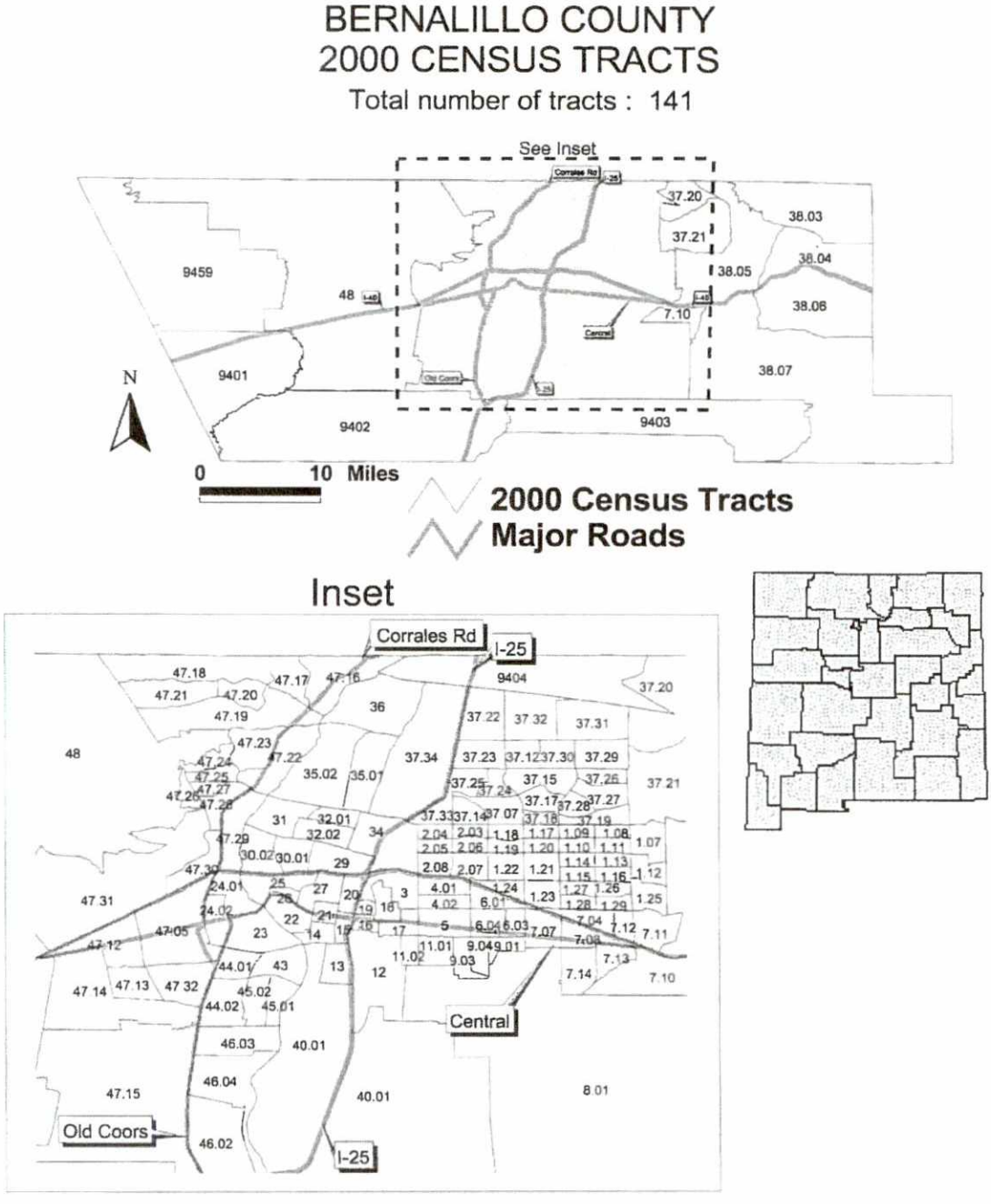
USEPA NATA Database. http://www.epa.gov/ttn/atw/nata2005/

Valentine JL, Lee SST, Seaton MJ, Asgharian B, Farris G, Corton JC (1996). Reduction of benzene metabolism and toxicity in mice that lack CYP2E1 expression. Toxicol Appl Pharmacol 141(1):205-213.

Wallace L (1996). Environmental exposure to benzene: an update. Environ Health Perspect 104(Suppl 6):1129-36.

World Health Organization (WHO). 1998. International Programme on Chemical Safety. Selected Non-heterocyclic Polycyclic Aromatic Hydrocarbons. In: Environmental Health Criteria, Series 202. World Health Organization, Geneva, Switzerland.

Appendices



Prepared by: Bureau of Business & Economic Research, University of New Mexico, Apr. 2005.

Figure A1. Location of US Census Tracts in Bernalillo County, New Mexico

Table A1. Air Exposure Criteria – Federal Standards (µg/m^3)

MSAT Compound	U.S. Environmental Protection Agency – Integrated Risk Information System [IRIS]								
	NAAQS	RAC[a]	Health Effects	Conf.[b]	Model[c]	RsD 10^{-6} Risk[a]	Ref[d]	Incr. risk per 1 µg (lifetime exposure)	EPA Weight of evidence for human carcinogenicity
Acrolein		0.02	Nasal Legions	M	A	n.a*	1	n.a.	n.a.
Benzene		30	Decreased Lymphocyte Count	M	H	0.13 – 0.45	2	2.2 to 7.8 x 10^{-6}	"known" human carcinogen
1,3-Butadiene		2	Ovarian atrophy	M	A	0.03	3	3 x 10^{-5}	"sufficient evidence"
Diesel Particulate Matter (DPM)	For $PM_{2.5}$ mass: Acute= 35 µg/m^3 Annual= 15 µg/m^3	5	Pulmonary inflammation/ histopathology	L-H	A	NA**	4		"likely to be carcinogenic to humans"
Formaldehyde		–				0.08	5	1.3 x 10^{-5}	Limited
Naphthalene		3	Nasal effects: hyperplasia and metaplasia in respiratory and olfactory epithelium, respectively	L-M	A	Not derived***	6		Inadequate
Polycyclic Organic Matter							7		

Notes: NAAQS - National Ambient Air Quality Standard
RAC - U.S. EPA Reference Air Concentration (annual average) in µg/m^3, 40 CFR 266, Appendix IV.
RsD - Risk Specific Dose of a 10^{-5} increased cancer risk due to a lifetime exposure (70-year average) via the inhalation pathway, 40 CFR 266, App. IV.
[a] Units are in µg/m^3
[b] Level of Confidence: L= Low, M= Medium, H= High
[c] Model: A= Animal, H= Human
[d] References: 1 http://www.epa.gov/iris/subst/0364.htm 2 http://www.epa.gov/iris/subst/0276.htm 3.http://www.epa.gov/iris/subst/0139.htm 4 http://www.epa.gov/iris/subst/0642.htm 5.http://www.epa.gov/iris/subst/0419.htm 6 http://www.epa.gov/iris/subst/0436.htm
* Not applicable ** The absence of adequate data has prevented the estimation of carciongenic risk *** Not derived due to weakness of evidence

Table A2. Air Exposure Criteria – NY & CA State Standards ($\mu g/m^3$)

MSAT Compound	N.Y. Air Guide[1]		California Air Guide[2,3]							
	SGC ($\mu g/m^3$)	AGC ($\mu g/m^3$)	Acute Inhal. ($\mu g/m^3$)	Model[a]	Hazard Index Target Organs	Chronic Inhal. ($\mu g/m^3$)	Model[a]	Hazard Index Target Organs	RsD 10^{-6} Risk	Increased Cancer risk per 1 $\mu g/m^3$ (lifetime exposure)
Acrolein	2.5	0.35*	2.5	H	Eyes, Respiratory System (sensory irritation)	0.35	A	Respiratory system	n.a.	n.a.
Benzene	1300	0.13**	1300	A	Reproductive/ developmental	60	H	Hematologic and nervous systems; developmental	0.034	2.9×10^{-5}
1,3-Butadiene	n.a.	0.033**	n.a.	n.a.		20	A	Reproductive system	0.0059	1.7×10^{-4}
Diesel Particulate Matter	n.a.	n.a.	n.a.	n.a.		5	A	Respiratory system	0.0033	3.0×10^{-4} †
Formaldehyde	30	0.06**	55	H	Sensory irritation; eyes	9	H	Respiratory system	0.17	6.0×10^{-6}
Naphthalene	7900	3*	n.a.	n.a.		9	H	Respiratory system	0.029	3.4×10^{-5}
Polycyclic Organic Matter	n.a.	n.a.								

Notes: All units are in $\mu g/m^3$

[1] New York Air Guide http://www.dec.ny.gov/docs/air_pdf/agcsgc10.pdf

[2] California Acute and Chronic: http://oehha.ca.gov/air/allrels.html

[3] California Cancer: http://www.oehha.ca.gov/air/hot_spots/2009/AppendixA.pdf

SGC – Short-term Guideline Concentrations

AGC – Annual Guideline Concentrations

* Non-cancer ** Cancer

[a] Model: A= Animal, H= Human

† "Reasonable estimate" (range: 1.3×10^{-4} to 2.4×10^{-3})

STATE OF NEW MEXICO
Before the
ALBUQUERQUE-BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD

IN THE MATTER OF THE PETITION FOR
A HEARING ON THE MERITS REGARDING
AIR QUALITY PERMIT NO. 3131 [Honstein Oil]

WRITTEN TESTIMONY OF DANA ROWANGOULD

I, Dana Rowangould, do hereby swear and affirm that the following is true to the best of my knowledge. I am qualified and competent to give this declaration, and the factual statements herein are true and correct to the best of my knowledge, information and belief. The opinions expressed herein are based on my best professional judgment.

I. Name and Title

My name is Dana Rowangould. I am a principal in Sustainable Systems Research, LLC, a private consulting firm that specializes in environmental, public health and social equality issues. I am also an Affiliate Associate Professor with the University of Washington, Department of Civil and Environmental Engineering.

II. Education and Experience

I received my Bachelor's of Science (*cum laude*) in Civil and Environmental Engineering (with an emphasis in Environmental Engineering) in 2002 from Rice University. I received my Master's of Science in Agricultural and Resource Economics (with an emphasis in Environmental Economics) in 2009 from the University of California, Davis. I received my Ph.D. in Ecology (with an emphasis in Environmental Policy) in 2013 from the University of California, Davis.

SWOP Exhibit 3

I have conducted numerous analyses of pollution impacts on communities for local and national organizations. Those analyses have included a health impact assessment of two land use and transportation plans in California's Central Valley, mapping pollution sources and evaluating community demographics near rail facilities in Kansas City, Kansas; mapping air pollution sources and evaluating sensitive populations surrounding the port of New York and New Jersey in order to support a technical review of a Bayonne Bridge project; evaluating the demographics around an intermodal rail yard in Los Angeles; inventorying greenhouse gas emissions in the Cities of Woodland and Winters, California; and technical analysis of the air pollution impacts of a highway project in Los Angeles. I also have experience measuring and evaluating pollution levels in air, soil, and water at contaminated sites in Southeast Texas.

Additionally, I have published articles on air pollution and environmental justice in peer-reviewed journals, including *Energy Policy*, *Environmental Justice*, and *Global Environmental Change*. I also teach a graduate level course at the University of Washington which focuses on air pollution, active travel, health, and environmental justice impacts of transportation systems.

Finally, I have given presentations on air pollution and environmental justice to national organizations. A complete description of my education and experience is included in my *Curriculum Vitae*, attached as SWOP Exhibit 3.A.

III. Materials Reviewed

In preparing the foregoing testimony, I have reviewed the following materials:

1. Air Quality Authority to Construct Permit No. 3131;
2. Application materials for Air Quality Permit No. 3131;
3. Administrative Record, Permit No. 3131;
4. Honstein Air Quality Inspection Photographs and Map (dated 4/27/2012);

5. Honstein area Photographs from community members (dated 2/17/2013 and 10/25/2014)
6. City of Albuquerque ABQMaps Advanced Map Viewer;
7. Air Quality Active Stationary Source Permits (accessed via ArcGIS online map);
8. National Oceanic and Atmospheric Administration: Wind Rose Plot for Albuquerque International Airport;
9. US Census Data (including 2010 decennial Census, 2013 5-year American Community Survey data, and Quickfacts for the City of Albuquerque and Bernalillo County);
10. US EPA National-Scale Air Toxics Assessment;
11. US EPA Design Values for National Ambient Air Quality Standards;
12. Desert Research Institute, Albuquerque/Bernalillo County Community Scale Air Toxics Monitoring and Risk Assessment Project;
13. Bureau of Vital Records and Health Statistics "The New Mexico Selected Health Statistics Report 2005", August 2007;
14. Bernalillo County Place Matters, "Health Impact Assessment on NMRT's Request for Special Use Permit Prepared for the Bernalillo County Planning Commission April 6, 2011 Hearing", 3/22/2011;
15. Science for Citizens, "Ambient Air Quality in Southwest Albuquerque, San Jose Bucket Brigade Results", January 2014; and
16. Additional reference materials, as cited in SWOP Exhibit 3.B.

With the assistance of my colleagues (Dr. Deb Niemeier and Melody Eldridge), I have detailed my findings in SWOP Exhibit 3.B. Deb Neiemier and Melody's Eldridge's qualifications *Curricula Vita* are included in SWOP Exhibit 3.B.

IV. Introduction

The Honstein Oil bulk gasoline plant is located at 101 Anderson Ave. SE in the San Jose Neighborhood of Albuquerque. The facility receives gasoline by cargo tank trucks, stores the gasoline, and distributes gasoline to dispensing facilities via cargo tank trucks; throughput at the facility does not exceed 20,000 gallons per day. The City of Albuquerque Air Quality Authority to Construct Permit #3131 applies to an existing (and previously unpermitted) 6,000 gallon underground storage tank used for unleaded gasoline.

Gasoline storage and transport tanks emit volatile organic compounds (VOCs). The emissions from the permitted tank occur in the context of the San Jose neighborhood, which is home to approximately 2,500 residents, a school, and several other locations where people congregate. The neighborhood is also home to a number of industrial facilities emitting VOCs and other types of air pollution.

In this testimony I discuss the context, the state of knowledge and the conditions under which a comprehensive cumulative risk analysis may be warranted. Although data are limited, existing analyses and data sources suggest that there is potential for cumulative health risks to residents of the San Jose neighborhood. In particular, I find that:

1. The San Jose community is particularly vulnerable to incremental health effects: it is home to a greater percentage of people of color, people under age 18, and families living in poverty than the City of Albuquerque and Bernalillo County.

2. There are a number of other industrial activities occurring in the area, which likely have similar impacts on the community in terms of emissions and truck traffic. Specifically, the existing permitted stationary sources in the San Jose Neighborhood are allowed to emit over 330 tons of VOCs annually (in addition to several other air pollutants with known health impacts). When combined with mobile sources, including passenger vehicles, trucks, locomotives, helicopters, and planes, the amount of VOCs and other pollutants emitted in the San Jose neighborhood (which residents may be exposed to) is substantial.
3. The San Jose neighborhood has a substantially higher rate of permitted stationary emissions per square mile than the City of Albuquerque and Bernalillo County for seven out of eight recorded emissions categories.
4. There is limited but suggestive evidence that air quality and health impacts have been historically significant to the community. The combined impacts of the numerous pollution sources in the San Jose neighborhood (including the permitted emissions from the Honstein facility) may pose a reasonable risk to public health.
5. At least one other evaluation has pointed to cumulative impacts in this area.
6. The share of residents who are people of color or living in poverty in the neighborhood and the higher rate of emissions per land area raise serious equity and environmental justice concerns.
7. A comprehensive cumulative risk assessment could further determine and clarify the nature and extent of environmental, health, and equity impacts in the San Jose neighborhood. Such an analysis could also be used to evaluate the contribution of

various activities on those impacts and the benefits of implementing various mitigations.

V. Exposure to Permitted Emissions

Gasoline storage and transport tanks emit VOCs in a number of ways, including when they are filled and vapors are displaced, from leaks, and from breathing (venting of vapors as the tank temperature fluctuates). The rate of emissions from fuel storage tanks and tanks used to transport fuel depends on the storage conditions, the throughput of the tanks, and the nature of the transport tanks.

According to the Honstein Oil permit application, the tank age and manufacturer are unknown, although correspondence from the Environmental Health Department indicates that the tank was installed in the 1960's. The permitted tank is required to have at least a Stage I vapor recovery system, which would capture a significant portion of the gasoline vapors. The permit application indicates that estimated VOC emissions are expected to come from the tank working and breathing (0.87 tons/year), filling (0.14 tons/year), and tanker truck loading (1.24 tons/year). In total, the tank will be permitted to emit 2.26 tons of VOCs per year.

Gasoline generally contains over 150 hydrocarbons, including benzene, toluene and xylenes. Breathing gasoline vapors can cause lung irritation and induce a variety of nervous system effects, ranging from headaches and dizziness to coma or even death at high concentrations. Inhalation of benzene is of particular concern. Long term exposure to benzene (even at relatively low levels) can harm bone marrow, cause anemia, and increase the risk for infections. A lifetime of exposure to benzene concentrations of 0.13 - 0.45 micrograms per cubic meter ($\mu/m^{3)}$ (equivalent to 0.000041 - 0.00014 parts per million (ppm) at 25 °C) is expected to increase a person's lifetime risk of cancer by one in a million. Inhalation of higher concentrations

of benzene (e.g. several minutes of exposure to 1,000 – 20,000 ppm or more) can also cause acute central nervous system, cardiovascular, and respiratory impacts; in severe cases acute exposures can lead to unconsciousness or death. Inhalation of toxic chemicals can be particularly harmful for children and those engaged in outdoor activities (such as high activity work or sports).

Meteorological conditions, such as wind direction and speed and humidity, play an important role in determining the direction that emissions travel, and therefore the pollution concentrations to which people are exposed. Diagrams of the prevailing wind directions that carry emissions towards or away from potentially exposed people can be helpful in visualizing higher risk areas. Wind speed and direction in Albuquerque typically fluctuates, although in the winter the wind often blows from the north (*see* Figure 1 in SWOP Exhibit 3.B.).

When discussing emissions and their potential health impacts, it is important to examine the proximity of the Honstein Facility to locations where people might breathe emissions from the facility (or potential receptors). Locations of interest include homes and places where groups of people gather, such as schools, community centers, and places of worship. There are a number of potential receptors in the San Jose Neighborhood. The East San Jose Elementary School and the Herman Sanchez Community Center are particularly close to the facility and are locations where children congregate. There are also several potential receptors outside of the San Jose Neighborhood that are located within a half mile of the Honstein Facility. Potential receptors, distances to Honstein, and prevailing wind directions are indicated in Tables 1, 2, and Figure 2 of SWOP Exhibit 3.B).

VI. Potential Impacts of Truck Traffic

Tanker trucks can also have emissions and safety impacts in the San Jose neighborhood. Tanker trucks accessing the Honstein facility must travel on Anderson Ave SE or Thaxton Ave SE as well as on Broadway Blvd SE. These routes are adjacent to a number of homes and the East San Jose Elementary School (*see* Figure 4 of SWOP Exhibit 3.B).

The permit's VOC emissions estimate includes tanker truck loading emissions. Tanker trucks also have idling and exhaust emissions as they operate at the site and travel through the neighborhood. Trucks directly emit several pollutants that can result in health impacts: carbon monoxide (CO), nitrogen oxides (NO_X), and toxic air pollutants (some of which are VOCs); diesel exhaust also contains these pollutants and others, including particulate matter (PM). Exposure to these vehicle pollutants is associated with a number of adverse health outcomes, including a variety of respiratory and cardiovascular impacts as well as increased cancer risks. Health risks from vehicle pollution are greater for vulnerable populations such as the elderly and people with respiratory problems, and particularly for children, than for the population in general.

VII. Cumulative Health Risks and Social Equity

The incremental impacts of an action are of greater concern when the overall impact of many activities in an area is significant. The US EPA's 2003 Framework for Cumulative Risk Assessment (EPA/630/P-02/001F) defines cumulative risks as "the combined risks from aggregate exposures to multiple agents or stressors". According to the 2003 Framework, cumulative risks can result from exposure to multiple pollutants from multiple sources and may occur over a long period of time. While traditional risk assessment focuses on exposure to one chemical (often from one source), cumulative risk assessments can be helpful in settings where the effects of multiple exposures and multiple sources can result in greater risks to human health

or the environment. The evaluation of cumulative risks is not simply the addition of the risks from different chemicals or sources; it includes an assessment of how these stressors interact. Additionally, cumulative risk assessment emphasizes actual people that can be affected, rather than theoretical populations. It can also consider a wider array of stressors (including non-pollutant stressors such as a lack of health care or car crashes) and their interactive effects.

Consideration of cumulative risks (and similar concepts) has become relatively common in a number of environmental evaluation settings. "Cumulative impacts" are an important part of Environmental Impact Assessments (EIAs) of Federal projects conducted under the National Environmental Policy Act. Some states and localities have also begun to require and perform cumulative risk assessments. For example, a 2008 Minnesota statute requires that cumulative effects are evaluated and considered before air permits are issued in the Phillips Communities in South Minneapolis. The local pollution control agency now engages in modeling of cumulative emissions impacts. Similarly, under a 2009 ordinance in Cincinnati, Ohio, facilities seeking a new or expanded permit are required to show that they will not have a "cumulative adverse impact" on the environment or the community's health. Health Impact Assessments (HIAs), which have been conducted in a variety of jurisdictions and situations, often include an evaluation of cumulative risks.

The methods used to evaluate cumulative risks have developed considerably in the years since the consideration of cumulative impacts in EIAs was first required in 1979. A number of documents are available to assist with evaluations of cumulative environmental and health impacts. The following resources are a sampling of the available guidance for conducting or evaluating cumulative risk assessments:

1. EPA, "Framework for Cumulative Risk Assessment," May 2003, EPA/630/P-02/001F;
2. EPA, "Consideration of Cumulative Impacts in EPA Review of NEPA Documents," May 1999, EPA 315-R-00-002;
3. EPA, "Concepts, Methods, and Data Sources for Cumulative Health Risk Assessment of Multiple Chemicals, Exposures and Effects: A Resource Document," August 2007, EPA/600/R-06/013F; and
4. Margaret M. MacDonell, Lynne A. Haroun, Linda K. Teuschler, et al., "Cumulative Risk Assessment Toolbox: Methods and Approaches for the Practitioner," Journal of Toxicology, vol. 2013, 36 pages, 2013. doi:10.1155/2013/310904.

For example, EPA's 2007 Cumulative Health Risk Assessment guidance (EPA/600/R-06/013F) indicates that one situation which might indicate a need for a health risk assessment is the existence of multiple pollution sources or chemical releases. In that case, the first step would be to identify all the relevant (present and future) chemical releases and exposure pathways that can affect the population of concern. In particular, chemicals with high potential for health risks and similar effects are of interest. In the case of emissions from the Honstein facility, benzene and chemicals with similar health impacts might be a focus of a cumulative risk assessment. Once the sources and chemicals that will be assessed have been identified, the analysis follows exposure assessment steps of characterizing the sources, determining the spatial scope of analysis, evaluating the fate of emissions, determining who could be exposed, and quantifying their exposures.

In light of the potential for cumulative impacts associated with the chemicals emitted from the Honstein facility, chemicals emitted from other facilities in the area, and from the

emissions caused by trucks traveling in the area (from trucks traveling to and from the Honstein facility, through the area, and to and from other facilities in the area), I discuss the context, the state of knowledge and the conditions under which a cumulative risk analysis may be merited. In order to assess whether a cumulative risk assessment is warranted, I review what is known about whether the community is particularly vulnerable to incremental effects, whether several similar actions are occurring in the same area and whether those actions have similar impacts on the community, whether those impacts have been historically significant to the community, and whether other evaluations have pointed to cumulative risks. These factors are outlined in relation to NEPA document evaluation in EPA, "Consideration of Cumulative Impacts in EPA Review of NEPA Documents," May 1999, EPA 315-R-00-002.

1. Is the community particularly vulnerable to incremental effects?

Yes. In US EPA's "Framework for Cumulative Risk Assessment," (May 2003, EPA/630/P-02/001F), EPA outlines four areas of vulnerability that should be assessed in cumulative risk assessments: differential exposure, susceptibility/sensitivity, differential preparedness, and differential ability to recover. Children, the elderly, and people with existing health conditions are particularly vulnerable to inhalation of pollution. Additionally, low-income households and people of color can be more vulnerable to the effects of pollution exposure for a number of reasons, including greater rates of preexisting health conditions, greater exposure to a number of environmental hazards, greater social vulnerability (including stress), and limited access to health care.

Residents of the San Jose neighborhood are far more likely to be people of color, children, and living in poverty than residents of the remainder of the City of Albuquerque and of Bernalillo County (*see* Table 3 in SWOP Exhibit 3.B). In light of the permitted

activities' proximity to places where people live and gather (including homes, a school and community center) and the neighborhood sociodemographics, vulnerable people may be exposed to emissions from the Honstein facility.

2. *Are several similar actions occurring in the same area?*

Yes. A substantial number of similar activities are occurring at the Honstein facility and at other facilities in the area.

There are additional activities at the Honstein facility that may also result in air pollution. According to the City's air quality inspection map and photographs, there appear to be a total of five tanks in addition to a number of drums and containers. These tanks and containers store what appear to be diesel, refrigerants, naptha solvent, ethyl alcohol, waste oil, and hydraulic fluids and oil (in addition to gasoline). The City has indicated that these tanks are either not required to be permitted, contain materials with low volatility, or are empty when at the Honstein facility. Activities associated with these facilities may also contribute to emissions from the Honstein Oil property (in addition to those coming from the permitted tank) and have associated truck traffic.

In addition to Honstein Oil, there are 22 other permitted stationary sources of pollution in the San Jose neighborhood and 28 more within 0.5 miles of the neighborhood boundary, for a total of 50 stationary sources in the vicinity (*see* Tables 4a and 4b and Figure 6 in SWOP Exhibit3.B).

The San Jose Neighborhood is also bordered and bisected by several major transportation corridors. A major rail corridor lies just to the west of the neighborhood. Near the northern portion of the neighborhood there appears to be a rail yard with over a dozen separate tracks. BNSF Railway's Albuquerque Intermodal Facility is also located

in the San Jose Neighborhood, further south near Woodward Road. The neighborhood is in proximity to several high volume roads. In 2013, the average weekday traffic for the portion of Avenida Cesar Chavez SE just to the North of the San Jose Neighborhood was 33,500 vehicles per day. Broadway Blvd. SE (which bisects the neighborhood from north to south and forms the eastern border of the "handle") at the point where it passes directly adjacent to East San Jose Elementary School had an estimated 14,700 vehicles per day. Gibson Road between Broadway Blvd. and Interstate 25 had 18,200 vehicles. Rio Bravo Blvd., bordering the neighborhood in the south had 27,100 vehicles per day, and 2nd Street SW, just on the other side of the railroad tracks to the west of the neighborhood had 5,900 vehicles per day. Additionally, the portion of Interstate 25 bordering the neighborhood to the east has an estimated weekday average flow of 115,500 vehicles. The Albuquerque International Sunport is less than a mile to the east of the San Jose Neighborhood, while a small private heliport, KRQE Heliport, is less than a tenth of a mile north.

In conclusion, there are a number of other activities with air pollution emissions occurring in the San Jose neighborhood. Any similar future activities would also be relevant when considering cumulative impacts.

3. Do other activities have similar effects on the community?

Yes. The activities described above result in air pollution emissions (including VOCs), which increase the health risks for exposed residents. The existing permitted stationary sources in the San Jose Neighborhood are allowed to emit over 330 tons of VOCs annually (in addition to several other air pollutants with known health impacts). When combined with mobile sources, including passenger vehicles, trucks, locomotives,

helicopters, and planes, the amount of VOCs and other pollutants emitted in the San Jose neighborhood (which residents may be exposed to) is substantial.

4. Have these impacts been found to be historically significant for the community?

Very Likely. Analyses of health data and ambient pollution levels in this area are limited but as described below, the evidence that has been evaluated suggests that health risks may be elevated in the San Jose neighborhood.

The National-Scale Air Toxics Assessments (NATA) provide coarse indications of health risks by census tracts. These data should be interpreted with caution because they are too coarse to provide a clear indication of risks at the local level, although they can be useful for identifying areas that merit additional analysis. According to the 2005 NATA, the San Jose neighborhood may have elevated respiratory risks, largely due to vehicle emissions.

Similarly, Federal monitors record air quality across the country, but do not provide localized data in most areas. The nearest active EPA air monitor is in the South Valley (at 201 Prosperity SE), over 3 miles south of the Honstein facility and 0.7 from the San Jose neighborhood's southern boundary. The South Valley monitoring site records concentrations of lead, CO, ozone, PM2.5, and PM10. Although Bernalillo County is currently designated as in attainment of National Ambient Air Quality Standards for PM10 and ground level ozone, the South Valley monitor shows PM10 and ozone values that are very close to current standards. The PM10 design value for 2011-2013 actually appears to exceed standards according to the EPA's summary. The ozone value for Bernalillo County appears to exceed proposed ozone standards and the value in the South Valley equals the high end of the range of ozone standards that is proposed.

Note that ozone is formed when VOCs and NOx combine in the presence of sunlight, and ozone levels depend more heavily on regional (rather than very localized) emissions. However for areas that are close to standards, incremental emissions of VOCs or NOx may shift ozone levels, depending on regional conditions.

Air quality monitoring of toxics was conducted for a study in Bernalillo County between 2007 and 2009, as described in the Desert Research Institute's 2010 report, "Albuquerque/Bernalillo County Community Air Toxics Monitoring and Risk Assessment Project". The study examined a range of pollutants (including VOCs) for three locations, including a single location in the South Valley. The study compared measured pollution levels to risk-based values and also evaluated the health risks of exposure to four toxic VOCs (selected if they were measured at all three sites in the majority of valid samples). The study found that the observed pollution levels do not pose a significant health risk. The study also found that there was significant variation in VOC concentrations observed across the three monitoring sites, likely due to the variation in emissions from different sources. In light of this variation, the study is too coarse to evaluate the presence or absence of localized health risks in the San Jose neighborhood. The South Valley location appears to be at or near the Federal air monitoring location at 201 Prosperity SE, which (as noted above) is over 3 miles from the Honstein facility and over 0.7 miles from the San Jose neighborhood boundary. Pollution levels in the San Jose neighborhood likely vary across the neighborhood and likely differ from the levels observed at the South Valley sampling location.

A 2011 Health Impact Assessment completed by the Bernalillo County Place Matters Team evaluated death rates for Hispanics in the San Jose and Mountain View

(located immediately South of San Jose) neighborhoods. Death rates in these areas were found to be greater than for Hispanics in the remainder of the County (*see* Figure 7 of SWOP Exhibit 3.B). This finding is consistent across nearly all causes of death, including cancer and chronic obstructive pulmonary disease (COPD). For context, the death rates for Hispanics were similar to death rates for all races combined from 1996 – 2005 in the State of New Mexico.

Additionally, some air quality data is available for the San Jose neighborhood. Between September 13th, 2012, and September 18th, 2013, trained community members collected seven air samples along the railway corridor to the west of the San Jose Neighborhood as part of the San Jose Bucket Brigade, implemented with the SouthWest Organizing Project. Samples were analyzed for VOCs (including chlorobenzene, toluene, ethanol, acetone, styrene, d-limonene), particulate matter, and elemental carbon. The results of this sampling effort were analyzed and incorporated into a January 2014 report by Mark Chernaik, Ph.D. of Science for Citizens. Notable findings included:

- All samples contained "detectable and significantly elevated levels" of chlorobenzene and detectable levels of toluene. Levels of chlorobenzene are of particular concern as they are higher than typically found in other urban areas and they exceed the US EPA's provisional Reference Concentration (RfC).
- One PM2.5 measurement exceeded the US EPA 24-hour standard for PM2.5.
- Environmental Carbon (EC) levels in samples collected at the 2500-2600 block of Williams Street were "consistently high, indicating impacts from heavy vehicle (diesel engine) emissions."

- "Moderate amounts of ethanol (4 samples), acetone (2 samples), styrene (1 sample) and d-limonene (1 sample) were detected in air samples from southwest Albuquerque, but well below short-term and long-term health-based standards for exposure to these VOCs."

5. Have other analyses identified cumulative effects similar to what is proposed?

Yes. At least one other evaluation has examined the potential for cumulative health impacts in the Mountain View and San Jose neighborhoods. The 2011 Health Impact Assessment (HIA) conducted by Bernalillo County Place Matters found that the addition of an industrial facility would increase the health risks to residents due to increased truck traffic, noise, and odors. The study indicates that these health risks, environmental conditions, and noise, comprise cumulative impacts in the community.

VIII. Potential for Equity and Environmental Justice Imapcts

The US EPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Concerns about environmental justice have grown out of a number of studies that indicate that in many cases the burdens of environmental harms fall disproportionately onto people of color and low-income people, while environmental benefits often fail to serve those people. The US Executive Order 12898 and New Mexico's Executive Order 2005-056 urge U.S. and New Mexico agencies (respectively) to provide opportunities for all people to participate in the decision-making process and to avoid decisions which disproportionately harm low-income communities and communities of color.

As described above, the San Jose neighborhood is home to a greater percentage of people of color, people under age 18, and families living in poverty than the City of Albuquerque and of Bernalillo County. Additionally, the San Jose neighborhood has a substantially higher rate of permitted emissions per square mile than Bernalillo County or the City of Albuquerque as a whole for seven out of eight recorded emissions categories (there is only one permitted stationary source of lead in the region and no sources in the San Jose Neighborhood) (*See* Table 5 in SWOP Exhibit 3.B).

The combined facts of the greater share of residents who are people of color or living in poverty in the neighborhood and the higher rate of emissions per land area (when compared to the City of Albuquerque and Bernalillo County) raise serious equity and environmental justice concerns. The potential for cumulative impacts is of even greater concern in light of these environmental justice concerns.

VIII. Conclusions

The permitted Honstein Oil tank is expected to emit volatile organic compounds (VOCs), which pose an inhalation health risk. Truck trips associated with the permitted activities can also emit air pollutants and can pose safety risks due to collisions and leaks. These potential health risks occur in the context of the San Jose neighborhood, which includes residences, a school, and several other locations where residents congregate.

An in-depth cumulative risk assessment is out of the scope of our analysis. Rather, I discuss the context, the state of knowledge and the conditions under which a cumulative risk analysis may be warranted. Although data are limited, existing analyses and data sources suggest that there is potential for cumulative impacts in the area. The community is particularly vulnerable to incremental effects: it is home to a greater percentage of people of color, people

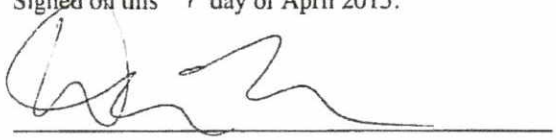
under age 18, and families living in poverty than the City of Albuquerque and Bernalillo County. Additionally, there are a number of other industrial activities occurring in the area, which likely have similar impacts on the community in terms of emissions and truck traffic. There is also limited but suggestive evidence that air quality and health impacts have been historically significant to the community. Finally, at least one other evaluation has pointed to cumulative impacts in this area.

In light of the sociodemographics of the neighborhood and the higher density of permitted emissions per land area, I also note that there are environmental justice concerns related to the potential for cumulative health risks.

A comprehensive cumulative risk assessment could determine the nature and extent of environmental, health, and equity impacts in the San Jose neighborhood. Such an analysis could also be used to evaluate the contribution of various activities on those impacts and the benefits of implementing various mitigations.

I declare under penalty of perjury, that the foregoing is true and correct to the best of my knowledge and belief.

Signed on this 7th day of April 2015.



Dana Rowangould, Ph.D.

HUMAN IMPACT PARTNERS

September 21, 2015

Dear reader:

This document summarizes: 1) significant issues that are insufficiently addressed in the revised Environmental Assessment for the proposed Sunport Boulevard extension and 2) relevant key findings from a Health Impact Assessment (HIA) of the proposed extension.

Human Impact Partners conducted the HIA with residents of the San Jose neighborhood, local advocacy organizations, and the New Mexico Department of Health, from June to November 2013. The draft HIA analyzed Bernalillo County's first publicly available Environmental Assessment for the Sunport Boulevard extension project, which was released in September 2011, in anticipation of an expected public comment period. However, the comment period was postponed, and nearly two years later in July 2015, the county released a revised Environmental Assessment (REA). After a review of the REA, the HIA report was finalized in September 2015. Although updated data for measures gathered in 2013 for the HIA may be available, the data presented in the HIA remains valid and supports the findings described in this summary. The full HIA follows this summary.

Please contact Sara Satinsky at 510-452-9442, ext. 104 should you have any questions.

Sincerely,

Sara Satinsky

Sara Satinsky, MPH, MCRP
Senior Research Associate
Human Impact Partners

SUMMARY OF SIGNIFICANT ISSUES

The Bernalillo County Public Works Division is proposing to extend Sunport Boulevard from its current end at Interstate 25 to the intersection of Broadway Boulevard and Woodward Road. However, residents of the San Jose neighborhood are concerned that the project, planned as a four-lane divided highway connecting to roads that go through the neighborhood, will increase traffic, harming their health and well-being.

The neighborhood of about 4,000 people in south Albuquerque already bears a disproportionate environmental burden, from past hazardous chemicals and other materials that contaminated soil and water, and air pollution from traffic and industry. San Jose is racially and ethnically diverse, younger, with lower income and higher unemployment than the county as a whole, and meets the U.S. Environmental Protection Agency's criteria for an environmental justice neighborhood. The neighborhood is in an area that has among the highest death rates in the county from several health conditions, including cancer, diabetes, and conditions related to heart disease.

Findings

The summary table below lists significant issues with the revised Environmental Assessment (REA) that are described in this document.

Summary Table: Significant Issues with the Revised Environmental Assessment (REA)	
Traffic congestion	- Evidence does not support or is insufficient to support the stated purpose and need for the extension to relieve congestion - Data generally demonstrates traffic volumes have stayed the same or decreased in recent years - The REA recommends building the extension even though data it provides suggests benefits if the extension is not built compared to if Alternative A is built. These benefits include: 1) greater reduction in vehicles for roadways predicted to have poor Level of Service in 2035 and 2) less traffic in 2035 for a segment of 2nd Street south of Woodward Rd – an important segment where increased volumes could contribute to new congestion, which the REA does not discuss - Data is inconsistent or absent; for example: 1) using different roadway segments in tables that model 2035 data for the No Build Alternative and Alternative A and 2) providing projected 2018 traffic volumes only for Alternative A, but not other alternatives - Fails to provide substantive data on how improved access to economic centers will further contribute to vehicle traffic
Air quality	- Fails to provide data on the amount or type of emissions permitted for sources in the neighborhood today, where a Health Impact Assessment found residents who make up less than one percent of the city's population bear much greater shares – from six to 11% – of permitted levels for seven pollutants that affect health - Fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide - Fails to predict future emissions for areas impacted by the project, including future industrial air emissions
Cumulative impacts	- Fails to consider cumulative impacts as defined in the spirit of the EPA definition for the NEPA process - Fails to describe cumulative impacts to each subject area in the REA or the additive effect from combining these individual cumulative impacts - Fails to consider negative cumulative impacts from Alternative A or positive cumulative impacts from other alternatives - States that a Design Overlay Plan will mitigate negative impacts of the extension. However, the Plan is proposed – not adopted – and has not been made available to the public prior to the comment period for the REA
Multi-Modal Access	- Fails to consider negative impacts of Alternative A on multi-modal accessibility from increased vehicle traffic - Does not achieve a stated aim of the project to improve pedestrian and bicycle connectivity by not including sidewalks for the entire length of the extension
Transparency of Data	- Does not provide important data, including: o Impacts to congestion from increased traffic on 2nd Street after the preferred alternative is implemented o Parallel data to compare traffic on Alternative A and other alternatives in 2018 o Data to compare 2035 traffic projections for the same roadway segments under Alternative A and No Build o Air quality monitoring – with the exception of carbon monoxide – or modeling o Data to compare cumulative impacts between Alternative A and other alternatives o Data to compare impacts in multi-modal access for the alternatives o Impacts of the extension to the health and well-being of neighbors living adjacent to the extension, including those it mentions are in six single-family homes located 550 feet north of Alternative A
Alternative Routes Considered	- Insufficiently demonstrates that Alternative A should be the preferred option (*see issues in this table*) - Fails to provide transparent justification for eliminating the TSM/TDM Alternative

Based on findings from our Heath Impact Assessment (HIA) conducted on the first Environmental Assessment released in September 2011, as well as an analysis of the revised Environmental Assessment, Human Impact Partners concludes that the county's proposed project and revised Environmental Assessment of the project is lacking in key areas. Not only does the San Jose neighborhood ***not appear*** to suffer from the traffic congestion used to justify the extension, but the extension could harm public health, through increased air emissions and unsafe streets. Additionally, despite requirements from the Council on Environmental Quality that cumulative impacts be considered in an environmental assessment, the revised Environmental Assessment fails to undertake meaningful cumulative impacts analyses in each of the subject areas it covers, nor does it discuss the additive effect of these individual impacts.

Congestion and Stated Need for the Extension

The REA identifies congestion relief as one major reason for the extension (page 1, paragraph 5). However, the evidence presented does not support this stated need and is insufficient in at least three ways.

First, the REA states that over the past few years, traffic volumes have decreased due to the economic recession and a significant drop in air travel through the Sunport airport (page 18, paragraph 1). With the exception of the Rio Bravo Boulevard road segment, data provided in the REA generally demonstrates a historical trend of traffic volumes that have either stayed the same or have decreased over time from 2008 to 2011 (page 18, table 2-2).[1] Recent construction on Rio Bravo Boulevard in 2011 and 2012 (page 25, paragraph 2) has likely improved volume-to-capacity ratios for this roadway segment, though the REA does not provide current traffic volume data for Rio Bravo Boulevard after the construction.

Second, data in the REA for future traffic volumes suggests greater reduction in vehicles – an estimated 397 vehicles total during peak hours and for roadways having a Level of Service (LOS) of D, E, or F for 2035 – if the extension is not built compared to if the preferred version (Alternative A) is built, based on data provided.[2] Further data cited by the REA suggests the 2nd Street road segment south of Woodward Road will have less traffic in 2035 under the No Build Alternative compared to if the preferred version of the extension were built (tables 2-1 and 3-2).[3] Increased volumes on this particular segment of 2nd Street could contribute to new congestion by increasing traffic backups in two ways: while more vehicles wait at Woodward Road and William Street for railcar changes at the nearby BNSF intermodal rail, or while more vehicles wait to begin to navigate the Rio Grande bridge crossing near 2nd Street and Rio Bravo Boulevard. The REA fails to discuss either of these potential impacts. It simply states, "The No Build Alternative would not meet the purpose and need for connectivity, improving the transportation system continuity or easing area traffic congestion" (page 25, paragraph 3).

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[1] Comparing 2008 with 2011 data, average weekday traffic volumes have increased only for the Rio Bravo Boulevard roadway segment, between Broadway Boulevard and I-25, from 30,820 vehicles per day in 2008 to 32,345 vehicles per day in 2011.

[2] The preferred alternative will reduce congestion (as measured by 2035 projected traffic volumes and poor Level of Service) for Broadway Boulevard, north of Woodward Road and for Rio Bravo Boulevard, Broadway Boulevard to I-25, while the No Build Alternative will reduce congestion for Broadway Boulevard, south of Woodward Road; Woodward Road, east of 2nd Street; and 2nd Street, from Rio Bravo Boulevard to Woodward Road.

[3] As noted in this summary, the REA is not systematic in how it refers to the same road segments under different alternatives. In the absence of data in different years for the same road segments, this statement must assume that where Table 2-1 refers to "2nd Street, Rio Bravo to Woodward" and Table 3-2 refers to "2nd Street, south of Woodward" it refers to the same segment of road.

Third, traffic data is sometimes absent and when provided is inconsistent. A comparison of the preferred alternative (Alternative A) with the No Build Alternative is modeled for 2035, but the REA uses different roadway segments for both 2nd Street and Woodward Road, making it impossible to compare projected traffic volumes under the two alternatives for each of these roadways without assuming they refer to the same segment of road, which they may not. For 2nd Street, table 2-1 refers to the segment from Rio Bravo Boulevard to Woodward Road but table 3-2 refers to the segment south of Woodward Road. For Woodward Road, table 2-1 refers to the segments from 2nd Street to Broadway Boulevard but table 3-2 refers to the segment east of 2nd Street. Further, the REA only provides projected 2018 traffic volumes for Alternative A and does not provide projected 2018 traffic volumes for the No Build Alternative or for other alternatives.

The REA also fails to provide substantive data on whether and how improved access to area economic centers, which could encourage more development, may add to traffic congestion.

Air Quality

The REA acknowledges air emissions sources in the area today – including industry, an airport, and Air Force base – but does not provide data on the amount or type of emissions permitted for each source. It also fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide. Absent monitoring or modeling data for these pollutants, it is difficult to evaluate the air quality impacts from the combination of existing sources, future traffic, and emissions related to development.

Indeed, the REA fails to predict future emissions for the neighborhood adjacent to the extension or the wider area impacted by the project. Instead, it generally states that the extension meets the federal National Ambient Air Quality Standards for carbon monoxide (page 46), and "the proposed Sunport Extension project is included in the MRCOG FY 2014 to FY 2019 TIP. The TIP conforms to the current State Implementation Plan for Air Quality developed by the Albuquerque – Bernalillo County Air Quality Control Board as required by the CAA." (page 46, paragraph 2). It further states that modeling of air emissions associated with future industrial air emissions was considered outside the scope of the REA (page 88), discounting the necessity of considering cumulative impacts for air quality.

Based on data provided by Human Impact Partners, the resident panel involved in the HIA came to the conclusion that the proposed project was likely to harm the health of San Jose residents – particularly children, older people and other sensitive populations – in a place that already permitted high levels of air pollution and has other contaminants. The table below highlights that ***while San Jose residents make up less than one percent of the City of Albuquerque's population, the community bears a much greater share of permitted pollution for seven important types of pollutants.*** The REA also does not address how the proposed project may contribute to this existing disparity.

Total tons of emissions allowed in San Jose and percent for City of Albuquerque, by pollutant, 2012

Hazardous Air Pollutants (HAPS)	Sulfur Oxides (SOx)	Particulate Matter 2.5 (PM2.5)	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Particulate Matter 10 (PM10)	Volatile organic compounds (VOCs)
76.8 **(11%)**	76.8 **(11%)**	57.0 **(11%)**	734.4 **(10%)**	571.3 **(7%)**	65.0 **(7%)**	295.3 **(6%)**

Source: City of Albuquerque Environmental Health Department, July 2012.

It is imperative, said one resident, to "protect the health, safety, (and) lifestyle of the people that live in the community," and the extension is an opportunity to illustrate how future development can protect and improve spaces where residents gather.

Cumulative Impacts

The county's REA consistently fails to consider the *cumulative* impacts of adding more traffic and pollution to existing conditions. It fails to describe impacts to each of the subject areas that it covers – such as air quality, noise, socioeconomics and environmental justice that include public health and safety – as well as the additive effect from combining these individual cumulative impacts. Cumulative is defined here in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects.*

In assessing cumulative impacts, the REA states that the extension will result in positive cumulative impacts from increased economic development, without providing data to support the statement (page 79, paragraphs 2 and 5). It fails to consider possible negative cumulative impacts, stating, "The County has prepared the San Jose/Mountain View Design Overlay plan, which when adopted could mitigate impacts from future new development" (page 79, paragraph 2). Details of the Design Overlay Plan and how it may mitigate impacts are absent.

Without changes to the underlying zoning designation, it is unlikely the Design Overlay Plan will mitigate environmental pollutants from future businesses locating along Woodward Road. Design overlay only addresses the visual aesthetics of design, rather than operational elements of businesses. In fact, the REA states, "Although adherence to adopted design overlay requirements would not be a voluntary process, the presence of the design overlay does not erode property rights of landowners within existing zoning controls" (page 55, paragraph 4).

The REA states that the County's proposed – but not adopted – Design Overlay Plan will also mitigate negative impacts of Alternative A. The Design Overlay Plan was not completed and made available to the public for review or input prior to the comment period for the REA. The not yet adopted document remains an idea but not a definite plan until it is approved. Further, the REA states that Alternative A is in close proximity – approximately 550 feet – to six single-family homes located east of Broadway Boulevard on the north side of Wesmeco Drive (page 62, paragraph 3).

Multi-Modal Access

Through the HIA process, residents found that the proposed extension would make streets less safe for pedestrians and bicyclists through increased traffic. The REA fails to consider negative impacts of Alternative A to multi-modal accessibility from increased vehicular traffic. Additionally, by not providing sidewalks for the entire length of the extension – only 700 feet of it – the REA misses an opportunity to realize a stated aim of the project to improve pedestrian and bicycle facilities and connectivity (page 9, paragraph 3). The REA cites lack of demand for accessing businesses on the east side of Interstate 25 as the reason without providing information to support the statement (page 27, paragraph 2).

Alternative Routes Considered

The REA does not sufficiently demonstrate that Alternative A should be the preferred route for the extension. According to projections provided in the REA, when compared to the No Build Alternative, total vehicles per hour during peak hours would increase under Alternative A

along roadways having a Level of Service of D, E, or F. The REA also does not provide transparent justification for eliminating an alternative for Transportation System Management/Transportation Demand Management (TSM/TDM). Of the TDM, the REA states that no large employers are actively sponsoring TDM initiatives in the study area and of the TSM, it says the alternative would provide "modest and localized improvements" in the operations of the overall existing transportation system, without providing data to substantiate the statement or to compare the TSM alternative with other alternatives (page 23, paragraphs 4 and 5). The REA also fails to consider the negative cumulative impacts that might result from Alternative A and the positive cumulative impacts that might result from the selection of alternatives D or H, both located further from residential areas, a TSM/TDM Alternative, or No Build Alternative.

Transparency of Data

The REA does not provide the data needed to substantiate a number of statements made in the report. The REA does not include data to assess: 1) impacts to congestion from increased traffic along 2nd Street as a consequence of implementing the preferred alternative; 2) parallel traffic comparisons between Alternative A and other alternatives for 2018; 3) 2035 traffic projections under Alternative A compared to the No Build Alternative for the same roadway segments; 4) air quality monitoring – with the exception of carbon monoxide – or modeling; 5) a comparison of cumulative impacts between Alternative A and other alternatives; 6) a comparison of projected improvements, or detractions, in multi-modal access for Alternative A and other alternatives; and 7) impacts of the extension to the health and well-being of neighbors living adjacent to it - residents living in six single family homes 550 feet north of Alternative A.

RECOMMENDATIONS*

The recommendations below come from a variety of sources. Fourteen were developed by the HIA resident panel in response to their analysis of the impacts of the first environmental assessment released in September 2011. They are included here because they continue to be relevant to the significant issues that remain in the REA (as described in this document).

In making these recommendations, we take a broad perspective that includes both the half-mile extension itself and the future economic development that will follow. As such, many recommendations would be implemented after the proposed extension is built, and with an emphasis on preventing future environmental hazards.

Overall

1. The county should more thoroughly and transparently reconsider Alternatives D and H, not only Alternative A, and mitigations.

2. The city and county should improve public information-sharing about the proposed extension and related planning. Specific actions include:
   a. Publicly share plans to meaningfully involve the San Jose neighborhood in ongoing planning for the Sunport Boulevard Extension, to ensure that resident perspectives help shape future development.
   b. Increase communication between city and county, as well as directly to residents, including but not only through the San Jose Neighborhood Association, and ensure communication is in culturally appropriate methods and languages. Publicly and immediately share formal and informal plans for the extension and development in the surrounding area. Specifically, share information on whether there is a vision – and what it is – for promotion of commercial and industrial development along the

extension, such as zoning documents or plans ranging from the short-term to long-term (e.g., five-year plans, thirty-year plans, and so forth).

If the Sunport Boulevard Extension is built:

Environmental Hazards

3. The city and county should require that future permitting processes for the San Jose neighborhood include the completion of cumulative impact assessments that more accurately consider health impacts. Cumulative is defined in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects.*

4. The City of Albuquerque Air Quality Division should improve air quality monitoring and enforcement of existing air quality regulations in the San Jose neighborhood as follows:
   a. Collect baseline information throughout the neighborhood on actual air quality emissions. If the information is collected by City or County agencies, it should be validated by outside organizations.
   b. After the extension is completed, regularly monitor air quality at sensitive sites such as schools and community centers. Commit to retrofitting these facilities (e.g., provide upgrades to building thermal performance and ventilation systems) to keep indoor air pollutant levels below applicable state and federal standards, and mitigate exceedances found at baseline levels, if pollution levels surpass what is harmful to human health.
   c. Add an air monitor in San Jose where vulnerable populations congregate. The monitor should measure the six criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead), as well as volatile organic compounds.

5. The city and county should ensure compliance with and enforcement of existing noise standards. To do so, the city and county should collect baseline noise measurements in the community of San Jose to ensure standards are not being exceeded.

6. The city and county should consider revising noise control ordinances to set the standard for traffic-related noise, at 65 dBA or less for daytime and 55 dBA or less for nighttime.

Safety from Injuries and Collisions

7. The city should prohibit heavy trucks on residential streets in San Jose neighborhood.

8. The city and county should implement appropriate traffic calming features to slow trucks on roads that will see increased traffic from the Sunport Boulevard Extension.
   a. Examples of traffic calming to consider are reduced speed limits, rumble strips, and landscaping.
   b. Example locations for reduced speed limits are Broadway Boulevard traveling down the hill by Bethel Avenue and San Jose Avenue.

9. The city and county should create facilities to protect and encourage pedestrians and bicyclists on roads near the Sunport Boulevard Extension that will experience increased traffic during and after its construction. Actions include:
   a. Building sidewalks with storm drainage. Example locations are Broadway Boulevard headed to Woodward Road, on Wesmeco Drive, on Arno Street, and John Street.
   b. Extending the bike lane on Broadway further into the San Jose neighborhood.

c. Adding traffic lights at the intersections of William Street and Woodward Road, as well as Second Street and Woodward Road.[c]

10. The City of Albuquerque Transit Department should ensure that the 16/18 bus route is maintained during and after construction of the Sunport Boulevard Extension. Also, the city should build bus shelters where the bus is used but there are not currently shelters to protect riders – for example, on William Street, Woodward Road, and Broadway Boulevard.

Miscellaneous Recommendations

11. Bernalillo County Public Works should include drainage facilities when building the Sunport Boulevard Extension.

12. To advance the economic prosperity of residents in the San Jose neighborhood, the Bernalillo County Economic Development Department should require businesses locating along Sunport Boulevard Extension to develop plans and commitments for local hiring, job training, and educational programs. For example, the city and county could work with businesses to start a GED program with instructors in the community that is free for low-income residents of the San Jose neighborhood.

13. To ensure San Jose residents are actually able to access workforce development and job training programs as well as access new jobs created in the community, the Bernalillo County Economic Development Department should require that businesses locating along Sunport Boulevard Extension *not ask* about applicants' history of arrest in job applications and interviews.[d]

14. The Bernalillo County Economic Development Department should establish a living wage (e.g., modeled on the living wage ordinance in Santa Fe) and require jobs created by businesses relocating or locating along the Sunport Boulevard Extension to pay such wages. In addition to paying a living wage, all permanent jobs (including part-time and full-time permanent jobs) created by business located near the extension should provide full health benefits.

Additional Recommendations
At the conclusion of the HIA process, the Steering Committee and project partners proposed additional recommendations to supplement those from the resident panel. These recommendations were not vetted in the same way, but are listed here as they provide valuable suggestions for appropriate parties to consider as well.

They include:

- Consider completing an Environmental Impact Statement to more fully assess the environmental impacts of the extension on environmental and human health, including reasonable alternatives (including a No Action alternative) that would avoid or minimize adverse impacts or enhance the quality of the human environment.

- The county, MRCOG, or other appropriate party should do a comprehensive traffic study that includes roadways connected to or near the extension that will be affected by it. The study should assess changes in traffic and how those are expected to affect air

[c] Two members of resident panel abstained from this vote
[d] There was not unanimous agreement on this proposal; however, the majority of residents on the resident panel voted in favor of it.

quality and noise. The study should consider potential short-term and long-term development (e.g., five-year plans, thirty-year plans, and so forth) that will and/or could take place if the extension is built.

- Absent discussion of cumulative impacts in this document, planning agencies and other authorities could consider a moratorium on approving projects that will result in new environmental hazards in the community.

- The city and county should draft relevant plans and commit funding to ensure pedestrian- and bicycle-safety measures and improvements on roadways such as Second Street that connect to the extension and will experience increased traffic or congestion, regardless of the alternative chosen. Plans should redesign these roadways for neighborhood pedestrian, bicycle, and vehicular safety, and to avoid increased cumulative air emissions. This should be done prior to completion of the extension in this environmental justice community.

- A specific way to implement the Steering Committee recommendation about public input is for the county to form and fund a Community Advisory Council that regularly provides input and feedback on plans for the proposed extension.

- Improvements to pedestrian and bicycle facilities on adjacent roadways that the extension will affect, such as Woodward Road, should be put in place when the extension is built.

- The County should consider building sidewalk adjacent to the entire length of the extension, rather than for only 700 feet.

- The appropriate body should provide voluntary relocation of residents living in housing that is the closest to the extension.

- The appropriate body should involve impacted residents in identifying requirements for developments within the boundaries of the Design Overlay Plan.

Shining a Light on Health: How the Sunport Boulevard Extension Project Will Affect Health and Well-Being

September 2015

By Human Impact Partners, with the participation of residents of the San Jose neighborhood

With support from
Bernalillo County PLACE MATTERS
New Mexico Health Equity Partnership–Santa Fe Community Foundation
New Mexico Department of Health
SouthWest Organizing Project

Authored by
Sara Satinsky, MPH, MCRP
Lili Farhang, MPH
Brooke Staton

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For more information, contact:
Sara Satinsky
Human Impact Partners
sara@humanimpact.org
www.humanimpact.org
510-452-9442, ext. 104

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For your deep dedication to health and well-being for all people, as well as your time, optimism, humor, warmth, and patience in helping to guide this work: The HIA Steering Committee.

For bringing your perspectives and passion to the table, and for carving out time around commitments to family, friends, jobs, and daily life to shape the place you call home: Deep thanks to the residents of the San Jose neighborhood.

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Steering Committee Members

Esther Abeyta
San Jose neighborhood resident
Bernalillo County PLACE MATTERS

Mónica Córdova
Formerly with SouthWest Organizing Project

Maria Gallegos
New Mexico Health Equity Partnership–Santa Fe Community Foundation

Jacque Garcia, MPH
Bernalillo County PLACE MATTERS

Daniel Michel
Bernalillo County PLACE MATTERS
New Mexico Public Health Association
Community and Regional Planning Program, University of New Mexico

Jerry Montoya
New Mexico Department of Health
Bernalillo County PLACE MATTERS

Juan Reynosa
SouthWest Organizing Project

Julia Stephens, MEP
Bernalillo County PLACE MATTERS
Stephens & Associates

Shash Yázhí
Formerly with New Mexico Health Equity Partnership–Santa Fe Community Foundation

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I. Introduction

The Bernalillo County Public Works Division is proposing to extend Sunport Boulevard approximately one-half mile from its current end at Interstate 25 to the intersection of Broadway Boulevard and Woodward Road. There it would join Woodward, which eventually ends at Second Street. The Sunport Boulevard Extension (the extension) would be a four-lane divided highway.

The county indicates that the extension will reduce congestion on Rio Bravo Boulevard, Gibson Boulevard and their interchanges with I-25; improve traffic flow by providing another east-west arterial; and continue the development of the street system envisioned in planning documents, which date to the 1980s.

If built, the extension will connect to roads that go through the neighborhood of San Jose in Albuquerque. Over the past two years, neighborhood residents have expressed concerns about the planning processes for the extension, especially the public participation process, and the scope of impacts examined in the county's environmental assessment. San Jose's population is racially and ethnically diverse, younger, lower income, and with higher unemployment than Bernalillo County overall. It has a long history of environmental degradation from industrial and auto pollution, including the designation of two Superfund sites, and meets the criteria of the U.S. Environmental Protection Agency of an environmental justice neighborhood.[1]

San Jose residents approached Human Impact Partners (HIP) about leading a Health Impact Assessment (HIA) of the proposed extension. Residents wanted to understand how the project would impact their health and well-being and to identify recommendations they could submit to the county to mitigate negative health effects or enhance positive effects.

This report summarizes the HIA. It focuses on three key areas: exposure to environmental hazards, safety from injuries and collisions, and social connectedness. Section II gives background information on San Jose, with a focus on the history of environmental issues and current demographics. Section III provides greater detail on the extension, including proposed alternatives, related planning processes, and findings from the county's environmental assessment report. Section IV describes existing conditions and predicts effects if the extension is built as proposed. Section V includes recommendations to decision makers and Section VI concludes the report.

About This HIA

Human Impact Partners led this Health Impact Assessment to understand how the proposed extension will impact the health and well-being of residents of the San Jose neighborhood. According to the National Academies of Sciences, HIA is "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects." The fundamental purpose of this HIA is to inform decision-makers before they decide on the extension proposal.

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[1] "To be classified as an environmental justice community, residents must be a minority and/or low income group; excluded from the environmental policy setting and/or decision-making process; subject to a disproportionate impact from one or more environmental hazards; and experience a disparate implementation of environmental regulations, requirements, practices and activities in their communities." Source: Environmental Protection Agency, Region 6. Frequently Asked Questions. http://www.epa.gov/region6/6dra/oejta/ej/ejfaq.htm

The HIA work was supported with funding from the W.K. Kellogg Foundation. Data was collected from June to November 2013, in anticipation of an environmental assessment public comment period soon after. However, the environmental assessment was revised and released approximately two years later, in July 2015. The HIA report was mainly drafted based on the original environmental assessment; however, it was completed in September 2015 to speak to significant issues identified in the original environmental assessment and still unaddressed or insufficiently addressed in the revised document.

Guiding the HIA process was a steering committee that included Human Impact Partners, a resident of the San Jose neighborhood, Bernalillo County PLACE MATTERS, New Mexico Department of Health, New Mexico Health Equity Partnership–Santa Fe Community Foundation, and the SouthWest Organizing Project. Early in the HIA planning process, the steering committee decided to use a consensus model. This approach seeks to meaningfully engage residents through a participatory research process, particularly when limited resources are available to weigh in on a proposal and a relatively short decision-making timeline is expected. The model is adapted from an approach that originated in Denmark to guide elected officials in science and technology decisions and stimulate public discussion of these issues.

For this HIA, the model included two meetings attended by a panel of residents likely to be affected by the decision (resident), members of the steering committee, and other stakeholders, as well as technical experts on the subjects under assessment (subject experts) who joined one of the meetings. The 10 panel members were all residents of the San Jose neighborhood and were identified and recruited by personal outreach from steering committee members. The HIA timing was initially targeted around an expected release of the EA in late Fall or early Winter 2013. The first meeting of the resident panel was on August 17, 2013. Panel members explored the connectedness between transportation and health, learned about the consensus process and how it could be used for the extension, and came to consensus on priority issues. From input at that meeting, the steering committee finalized the scope of the HIA.

At the second meeting, on September 14, 2013, panel members first examined demographic information about the neighborhood in the three issue areas. Then residents talked with experts in air quality and economic development, who provided a context for how these issues were relevant to the proposed extension. Residents also heard about resources for information on safety from injuries and collisions. Then they worked to reach consensus on likely effects the extension would have on factors that shape health, and came to consensus on recommendations to be included in the HIA.

HIP conducted the research and drafted the report, prepared materials for and helped facilitate the meetings and managed the overall process. Local steering committee members organized the meetings and facilitated portions of the agenda; provided feedback on the HIA's pathways and scope of research, and tracked the extension process. Resident panel members received a stipend of $100 for their participation at each meeting. At both meetings we provided breakfast and lunch, simultaneous Spanish interpretation, and all materials in English and Spanish. The second meeting also provided child care for participants.

Extensive research recognizes that health is a product of social, environmental and economic conditions that create opportunities for individuals, families and communities to lead healthy lives. We defined health in this broader context, leading the scope of research in the HIA to focus on three key areas: exposure to environmental hazards; safety from injuries and collisions; and social connectedness. See Appendix B for HIA pathway diagrams.

We examined more than 50 indicators and findings were derived through a range of methods. We reviewed the literature on the key areas of interest, conducted limited secondary data analysis and mapping of local data, and gathered statistics from administrative reports and government websites.

About Human Impact Partners

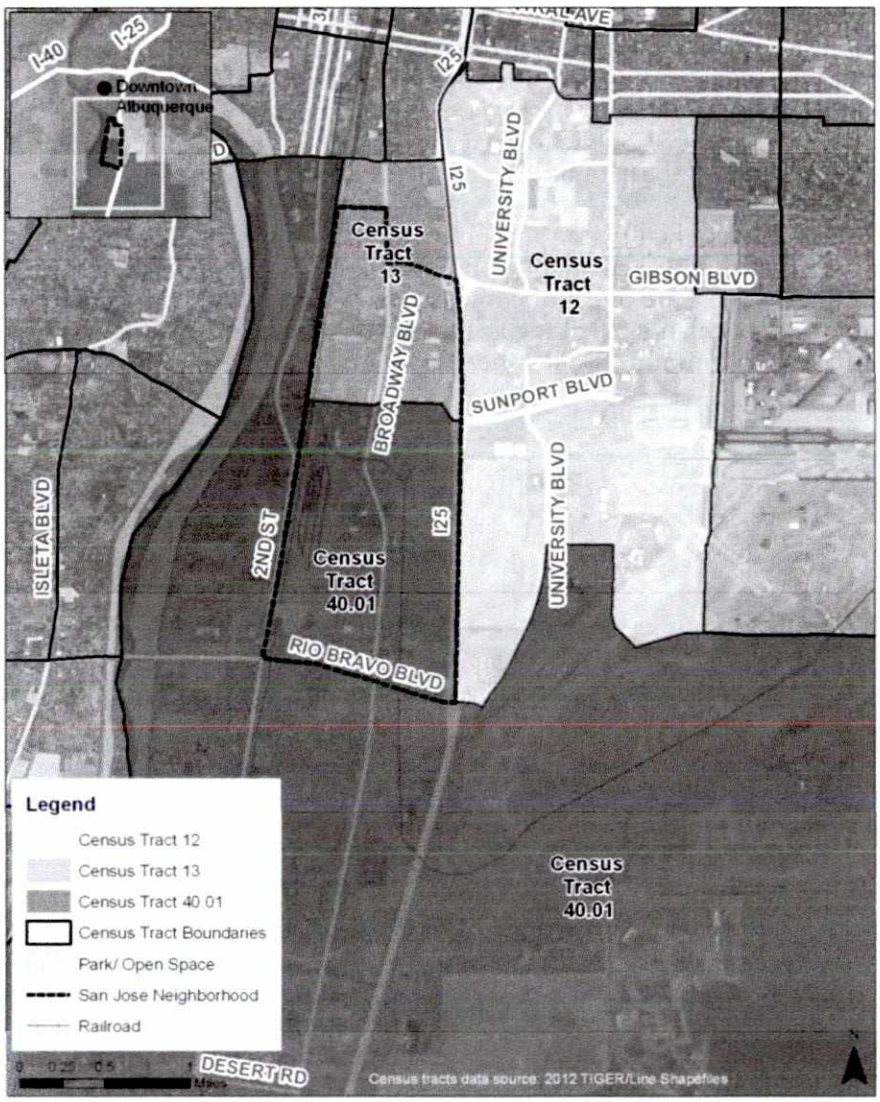
Human Impact Partners is a 501(c)3 organization based in Oakland, Calif. HIP's mission is to transform the policies and places people need to live healthy lives by increasing the consideration of health and equity in decision-making. Through research and advocacy, we help organizations and public agencies use innovative data, processes, and tools that evaluate health impacts and inequities to challenge the inequities that harm the health of our communities. Through training and mentorship we also build the capacity of impacted communities and their advocates, workers, public agencies, and elected officials to conduct health-based analyses and use them to take action.

Our work is guided by the definition of health established by the World Health Organization in 1946: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." We are one of the few organizations in the United States conducting health-based analyses with an explicit focus on uncovering and then addressing the policies and practices that make communities less healthy.

II. Background

The study area for this HIA is the San Jose neighborhood of Albuquerque, as identified by the San Jose Neighborhood Association. This area is bounded on the south by Rio Bravo Boulevard, on the west by the Santa Fe railroad tracks, on the north by Kathryn Avenue, and on the east by Broadway Boulevard, Gibson Boulevard and Interstate 25.

Map 1. San Jose neighborhood



Source: Human Impact Partners, December 2013.

Below we describe a brief history of environmental issues in San Jose and an overview of the neighborhood's demographics.

IIA. History of Environmental Issues in San Jose

San Jose has been next door to industrial and commercial operations for over a century. The neighborhood began as a primarily agricultural area in the early 1800s, became an industrial area with the arrival of the Atchison, Topeka and Santa Fe Railroad in 1880, and entered a period of decline in the mid-20th century. Today, land use policies continue to reflect this legacy by permitting rail lines and industry close to homes.[1]

The Environmental Protection Agency lists two Superfund sites in San Jose, both considered national cleanup priorities. The South Valley site is a one-mile radius around a public well being treated for groundwater contamination. In 1978 testing was done in response to resident complaints and detected chemicals called volatile organic compounds, which can be toxic to humans. The contamination was attributed to historic industrial and commercial operations, in particular the byproducts of decades of chemical and manufacturing activities by Univar and General Electric.[2] In the 1980s, 20 private wells and two municipal wells were taken offline and in 1994 two municipal wells were plugged and permanently abandoned.[2,3,4] There have also been efforts to clean up underground aquifers that were contaminated. In 2009, a five-year review found signs of contaminants and recommended that treatment continue. Residences are in close proximity to the site – at least one is within the site's borders and additional residences are adjacent to the site.[2]

A second Superfund site in the neighborhood is the Atchison, Topeka & Santa Fe (AT&SF) site. It has been undergoing cleanup of groundwater and soil since 1990 to correct contamination to it and is due for review in 2013, but is not now approved for reuse. The AT&SF site is the former home to a plant where the railway used chemicals such as creosote, which is harmful to human health.[2,5]

In 1972 the plant was demolished and contaminated debris from the structure was unsafely dumped into a nearby wastewater reservoir. The resulting contamination threatened groundwater and the soil. A hazardous liquid that dissolves in groundwater and slowly seeps towards the underlying bedrock was released. Additional risks were posed by zinc in the soil and toxic concentrations of air pollutants known as polynuclear aromatic hydrocarbons (PAH). The company, renamed BNSF, was ordered to remove the debris from the reservoir in 1990. Corrective actions have included soil and water treatment, removing or capping contaminated soil and sludge, and replacing groundwater. Under an agreement between BNSF, EPA, and the New Mexico Environment Department, the site is restricted to future industrial and commercial activities as a tradeoff for relaxed on-site capping standards.[6]

There is a strong tradition in the South Valley and in San Jose of community involvement in identifying potential environmental hazards, including efforts led by organizing groups, a local church, and residents alike.

In the 1960s, two local political organizations, the Black Berets and Brown Berets, sought to address a foul-smelling sewage treatment plant affecting residences in San Jose, organizing a neighborhood tour for officials.[7] More recently, active groups have included the SouthWest Organizing Project, a national pioneer of the environmental justice movement that continues in the South Valley today.[8,9]

Separately, a local church played a key role in a lawsuit filed by the New Mexico Attorney General that resulted in a multi-million dollar settlement with Chevron-Texaco.[10,11] Similarly, in 2004, South Valley residents and Amigos Bravos, a statewide conservation organization, pushed for important revisions to the Water Quality Control Commission's surface water

quality standards.[12] As recently as 2008, South Valley residents were involved in an effort urging the Bernalillo County Air Quality Control Board to adopt an environmental justice resolution and consider cumulative impacts of pollution.[13]

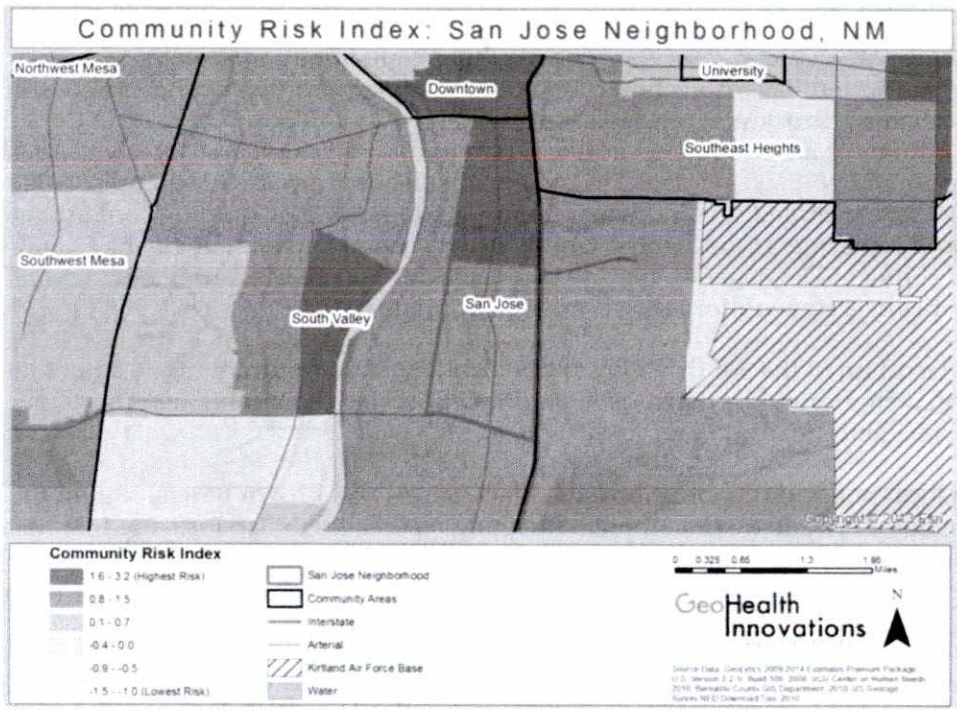
In the 1990s and 2000s, the now-defunct Albuquerque San Jose Community Awareness Council played an instrumental role in advocating for the environmental concerns of the community.[14] Growing from volunteers based in a neighborhood church to a state-funded environmental educational program, the council has been credited with many successes.[15,16] The record of public comment on the AT&SF plan shows that the council provided a strong, professionally informed presence on behalf of San Jose residents in the decision-making arena.[17]

More recently San Jose residents have urged consideration of the potential health effects of proposed projects such as an indoor dirty material recovery facility and a newly acquired Vecenergy bulk gasoline terminal.[18] Residents also have participated in a community-operated air-quality monitoring project in partnership with the SouthWest Organizing Project and Global Community Monitor.[18,19,20]

IIB. San Jose Today

A picture is worth a thousand words. The map of San Jose below depicts the neighborhood's *community risk index*, among the highest in Bernalillo County. Risk is defined here as a single measure that is created by combining several economic, educational, and social factors such as unemployment, education, and crime.[i]

Map 2. Community risk index by census tract, San Jose neighborhood, Albuquerque, 2010



[i] For the full list of factors included in the index, see: http://www.societyhealth.vcu.edu/Page.aspx?nav=214

Table 2 describes demographics in the neighborhood. (Data often are not available for this exact area, and in those cases we use the closest approximations available.[1]) Overall, San Jose makes up less than one percent of the county population. However, compared to Bernalillo County it is a younger neighborhood, with a larger portion of the population under age 18, and one with a much higher proportion of non-whites (it is predominantly Hispanic/Latino).

Nearly 1 in 4 families in San Jose lives in poverty; the median income is 60 percent that of Bernalillo County overall. Less than half of residents have a high school diploma or equivalent, in a county where jobs often require the equivalent of a high school degree or higher (see Table 1). Unemployment is nearly one-third higher in the neighborhood than within the county overall.

Table 1. Example of minimum education level required for jobs in Bernalillo County, October 2, 2013

Minimum Education Level	Percentages for Bernalillo County
Not Specified	N/A
High School Diploma or Equivalent	50 %
Vocational School Certificate	3%
Associate's Degree	11%
Bachelor's Degree	30%
Master's Degree	5%
Doctorate Degree	1%
Source: New Mexico Department of Workforce Solutions, October 2, 2013.	

San Jose residents spend less time, on average, getting to work than county residents overall. More residents take public transportation to work when compared to the county, and a larger portion does not have access to a car.

Table 2. Demographics of San Jose neighborhood and Bernalillo County, NM

Indicator	San Jose neighborhood	Bernalillo County
Population[21]	4,301	655, 306
Age[21]	33%	24%
Non-white population[21]	97%	58%
Hispanic / Latino population[21]	94%	48%
Median household income (in 2011 dollars)[22]	$28,507	$48,231
Income below poverty in the past 12 months[22]	13%	24%
Less than a high school diploma or equivalent[23]	53%	13%

[1] For health data, from the New Mexico Department of Health, and per the recommendation of staff at that agency, the report uses Small Area 7. For demographics and environmental hazards, we use census tract 13. For crime data, we use the San Jose Neighborhood Association boundary and report information only from the Albuquerque Police Department; this excludes the portion of the neighborhood in the Bernalillo County Sheriff Office's jurisdiction.

Table 2 (continued)

Indicator	San Jose neighborhood	Bernalillo County
Unemployment[22,24]	10.9%: 2007-2011 estimate 6.2%: 2006-2010 estimate	7.3%: 2007-2011 estimate 4.2%: 2006-2010 estimate
Time spent traveling to work[22]	19 minutes	22 minutes
Public transportation to commute[22]	6%	2%
Access to a motor vehicle[22]	8%	6%
Sources: American Community Survey, 2006-2010 and 2007-2011.		

High crime rates have decreased over time both in the San Jose neighborhood and Albuquerque overall, but remain an area of focus today. Recent rates for reported violent crimes are lower, but property crime rates are higher in San Jose than in the city overall.

Reported violent crimes in the neighborhood are an estimated 3 per 1,000 people compared to an estimated 8 per 1,000 people in the city overall; however are likely an undercount in the neighborhood.[s] Reported property crimes are an estimated 21 per 1,000 people in the neighborhood compared to an estimated 5 per 1,000 people in the city overall.[25]

In both Albuquerque and Bernalillo County, gross receipts dipped during the national recession in 2008, though the city experienced a larger dip than the county (see table 3).[t]

Table 3. Tax revenues for City of Albuquerque and Bernalillo County, FY2007-2011

Municipally Imposed Gross Receipts Tax Revenues, City of Albuquerque and Bernalillo County, Fiscal Years 2007 to 2011 (in millions of dollars)					
	2007	2008	2009	2010	2011
City of Albuquerque[26]	$188.6	$177.9	$154.2	$132.0	$ 144.5
Bernalillo County[27]	$100.1	$95.8	$91.7	$89.1	$89.7
Sources: City of Albuquerque, 2012 and Bernalillo County, 2008 to 2011.					

Zoning in San Jose allows various residential uses in the northern part of the neighborhood, and various types of industrial and heavy manufacturing uses in the southern part. In terms of how land is actually used, it is primarily a mix of vacant properties or other uses, industry, and homes (39% vacant or other, 29% industrial, 10% residential). There is some commercial land use (4%), but overall there are few commercial or retail opportunities for residents, either for jobs or as consumers (see map 3).[28]

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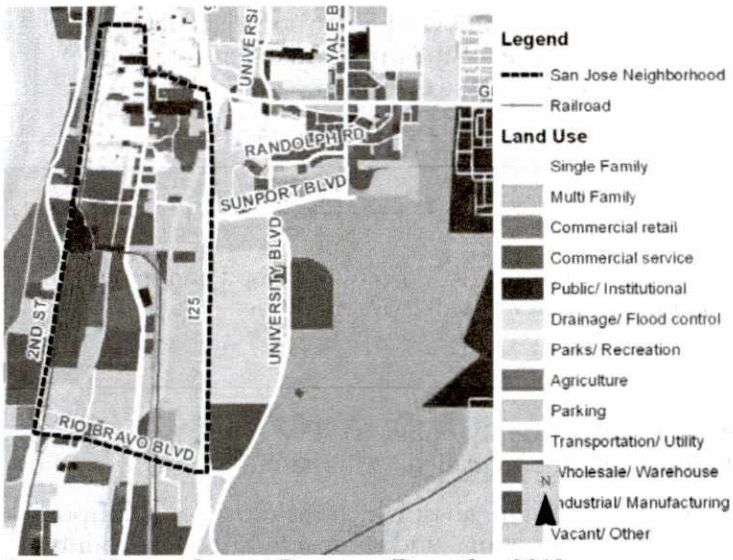
[s] For San Jose neighborhood estimated crime rates are derived from crime frequencies provided by the Albuquerque Police Department (APD) and population estimates from the U.S. Census. These numbers are likely an undercount. They include reported crimes in the APD jurisdiction, which does not include areas of San Jose that are in the jurisdiction of the Bernalillo County Sheriff's Department. Also, they include only reported crimes. Many crimes may go unreported. A limitation is that the estimates approximate the population of the area served by Albuquerque Police Department, using U.S. Census information. Estimates of crime rates for the City of Albuquerque are reported from the FBI's Uniform Crime Reporting system.

[t] Sales tax revenue is a major source of revenue for local, state, and federal governments. In New Mexico, sales tax revenue is measured in gross receipts revenue. Gross receipts revenues are not readily available at the level of the San Jose neighborhood; however, they are available for the city and county overall.

Map 3. Land use in and around San Jose neighborhood



Source: Human Impact Partners, December 2013.

Snapshot of health in San Jose

A recent study in the *American Journal of Public Health* that focused on women, summarized the importance of social conditions in thinking about demographics and health outcomes:

> *". . . Higher rates of both poor health outcomes and higher risk behaviors in women of color and low-SES women should be seen as reflective of adverse social circumstances rather than individual failing. In a similar way, data on lower rates of adverse health outcomes and risk behaviors in White and more affluent women should be seen as reflective of the privileges and advantages that accompany membership in a dominant social group."*
>
> *- Dehlendorf et al. AJPH, October 2013, vol 103, no 10*

From that perspective, we summarize current health conditions in San Jose and related costs.

San Jose's health area has among the highest rates in the county of deaths from several health conditions. It ranks first in deaths from cancer as well as conditions related to hardened arteries and high blood pressure, second in deaths from diabetes as well as respiratory diseases related to flu and pneumonia, and sixth in deaths from heart disease.[ii][29]

Living with these conditions has costs for residents, and a large proportion of neighborhood residents do not have health insurance. The average cost of cancer treatment is $150,000.[30] One-year costs for patients with atherosclerosis, or hardened arteries, average approximately $13,000.[31] Costs associated with stroke average $15,000 per person, and the American Diabetes Association estimates around $8,000 in annual cost for a person with diabetes is.[32,33] For a person who experiences heart failure, costs to cover medication and hospital are an estimated $8,500.[34] Approximately one-fourth (24.3%) of residents in the neighborhood do not have health insurance; a higher proportion than for the county overall (19.8%).[35]

[ii] Based on death rates – meaning deaths per 100,000 people – that have been adjusted for age during the period 1999-2011 across small areas in Bernalillo County.

III. About The Sunport Boulevard Extension Project

This section describes in detail the proposed Sunport Boulevard Extension, lists planning documents apart from this project that explicitly reference the proposed extension, and describes findings from the county's initial environmental assessment.

III.A. The Proposed Extension in Detail

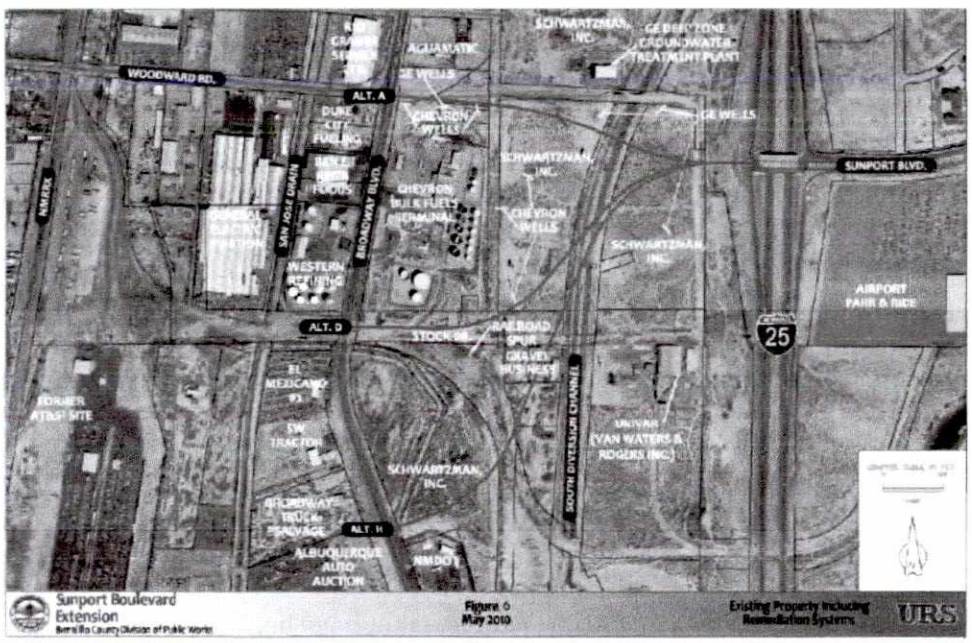
At-A-Glance (based on 2011 Environmental Assessment)

Justification: Lengthen Sunport Boulevard so it connects to Woodward Road and eventually ends at Second Street, instead of its current endpoint at the I-25 interchange
Length: Approximately half a mile
Design: 4 lanes
Cost: $17 million-plus
Funder: Federal and state transportation agencies, county public works
Location: TBD; county prefers Woodward Road option (called "Alternative A")

The county is considering three routes for the extension, all of which seek to extend Sunport Boulevard from its current end at I-25. Of the three options under consideration, the county prefers the Woodward Road option.

- Woodward Road option (Alternative A): Lengthen Sunport Boulevard to the intersection of Broadway Boulevard and Woodward Road. There it would join Woodward, which ends at Second Street.
- Stock Drive option (Alternative D): Lengthen Sunport Boulevard to the intersection of Broadway Boulevard and Stock Drive, south of the Chevron bulk fuels terminal.
- Unnamed street option (Alternative H): Lengthen Sunport Boulevard to the intersection of Broadway Boulevard and an unnamed 400-foot-long long dead-end street that is just north of an equipment yard for the New Mexico Department of Transportation.

Map 4. Alternatives under consideration, Sunport Boulevard Extension



Source: URS Corporation, September 2011.

The proposed extension would include:

- A median divider
- Bridges over the Albuquerque Metropolitan Arroyo Flood Control Authority South Diversion Channel and over Edmunds Street
- A combination of retaining walls and fill sloping to grade

The extension also crosses the South Valley Superfund site, described above.

The county is undertaking the proposed extension in cooperation with the New Mexico Department of Transportation and the Federal Highway Administration. The estimated cost is between $17.1 million and $17.9 million. Not included in the cost are proposed, but unfunded, improvements for Woodward Road, which connects to the Sunport Boulevard Extension.

Currently the project is undergoing environmental assessment. Funds have been allocated but the assessment must be completed before the county can complete design and construction by the projected fall 2017 completion date.

III.B. The Proposed Extension in Context

Over time, various planning processes for the city, county and region have shaped the San Jose neighborhood. Below are several key plans that mention the proposed extension. In these documents, the project is considered a "committed improvement," one that has dedicated funding and is expected to be built.[37]

Mid-Region Council of Governments (MRCOG) 2035 Metropolitan Transportation Plan, approved in June 2011. The Metropolitan Transportation Plan is a long-range planning document, updated every four years and projecting 20 years in the future. It identifies transportation needs, goals, and a framework to meet these needs.

MRCOG FY 2012 to FY 2017 Transportation Improvement Program. The Transportation Improvement Program is a plan for implementing needs identified in the Metropolitan Transportation Plan. It is updated twice a year and covers projects intended to begin six years into the future. It also lists anticipated federal, state, and local money for the projects.[38] For the proposed extension, the plan estimates the cost at nearly $18 million.

New Mexico Statewide Transportation Improvement Program. The state has its own version of the Transportation Improvement Program, since federal funds go through the state to regional agencies like MRCOG. The state plan, current as of September 2013, includes the proposed extension, listing state sources of funding to contribute to the nearly $18 million estimated cost.

Additional plans that touch on the San Jose neighborhood include the comprehensive plan, and various area and sector plans. See Appendix A for a summary.

About Environmental Assessments and Environmental Impact Statements[39,40,41,42]

Environmental Assessment is a brief public document that agencies use when the magnitude of impacts from a project are uncertain. It has three purposes: to provide sufficient evidence and analysis for agencies to determine whether to prepare a more in-depth report, known as an Environmental Impact Statement; to help an agency identify alternatives and mitigation measures if a more in-depth Environmental Impact Statement is not needed; and to help an agency prepare an Environmental Impact Statement, if one is needed. An Environmental

Assessment is made publicly available, and after public comments are received and considered, a final decision is made to either: 1) prepare a more in-depth Environmental Impact Statement because the Environmental Assessment showed that the project will have significant impacts, or 2) make a Finding of No Significant Impacts, known as a FONSI, meaning the project proceeds without preparing an Environmental Impact Statement. The Sunport extension project is currently in the environmental assessment phase.

Environmental Impact Statement is a detailed analysis that a federal agency must prepare if it is proposing a major federal action that will significantly affect the quality of the prospective, meaning future, human environment. The statement is prepared after an Environmental Assessment finds that the project will have significant impacts, or if an agency decides to skip an EA entirely because it considers a project environmentally controversial and goes directly to preparing the Environmental Impact Statement. The statement should discuss significant environmental impacts and reasonable alternatives (including a No Action alternative), which would avoid or minimize adverse impacts or enhance the quality of the human environment. The regulatory requirements for an Environmental Impact Statement are more detailed than the requirements for an Environmental Assessment.

Sources: Council on Environmental Quality, 2013; US Department of Transportation, 2013; US Environmental Protection Agency, 2013.

III.C. The Proposed Extension: Environmental Assessment Background and Findings

In September 2011, Bernalillo County Public Works released an environmental assessment for the Sunport Boulevard extension project. Prepared by the URS Corp., the document primarily describes the project's history, purpose and need; design alternatives for the extension; and the affected environment, projected effects and proposed mitigations. In July 2015, the county released a revised environmental assessment report for the same project.

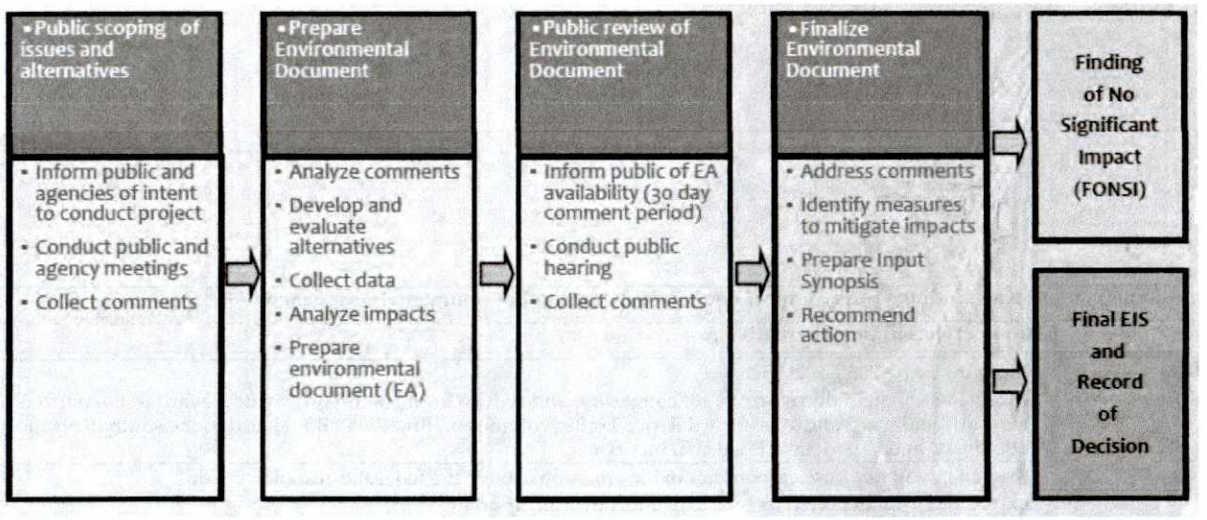
According to the 2011 assessment, the need for and purpose of the Sunport Boulevard Extension are to:

- Reduce traffic congestion on the adjacent arterial streets of Rio Bravo Boulevard, Gibson Boulevard and their interchanges with I-25.
- Connect elements of the area's transportation network by providing another east-west arterial roadway connecting Broadway Boulevard and I-25.
- Continue the development of the planned transportation system and incorporate Sunport Boulevard between Broadway Boulevard, I-25 and Albuquerque International Sunport Airport as envisioned in previous planning documents dating to the 1980s.

Draft environmental assessment findings that are particularly relevant to the HIA are described in Table 4. They include findings for traffic congestion, air quality, noise, bike lane access, bus access, economic development, monitoring of remediation on Superfund land, communities and land use, socioeconomics and environmental justice, and cumulative impacts.

The graphic below, from the county's Public Works Division, describes key points in the environmental assessment process for the extension.[8] In September 2011, the county released the first draft of the assessment. The revised assessment was made publicly available in mid-July 2015, with a subsequent public comment period ending in September 2015. The county intends to submit the report to relevant federal and state agencies for final approval with a request for a Finding of No Significant Impact (FONSI), unless significant impacts are identified during the public comment period. If a FONSI is requested, an Environmental

Impact Statement will not be required, meaning the county will be able to access allocated funds to begin design in 2014-2015 and construction in 2016-2017.



Source: Bernalillo County Public Works, (n.d.).

Table 4. Summary of Key Findings from Sunport Boulevard Extension Environmental Assessment	
Topic	**Future effects under Alternative A**
Traffic congestion	- More traffic by 2030 or 2035. - Extension will help decrease overall congestion and reduce traffic on Broadway Boulevard to the north of Sunport Boulevard and Woodward Road. Traffic volumes on Broadway Boulevard to the south of Sunport Boulevard and Woodward Road will increase.
Air quality	- Extension will not raise carbon monoxide emissions above the federal threshold criteria. - Extension is not expected to seriously affect overall air quality. - A dust control plan will be in place during construction.
Noise	- No anticipated noise impacts, so no plans to reduce noise impacts.
Bike lane access	- The half-mile extension will include five foot bike lanes on each side, to eventually connect Broadway Boulevard with University Boulevard - The bike lanes will be part of a future connectedness to the Riverside Trail.
Bus access	- Will look into making it easier to transition from one transportation type to another. - Will consider different forms of transportation, including how to get people to the airport.
Economic development	- New access to land for potential businesses will spur industrial redevelopment and the cumulative impact will be positive for economic and commercial growth.
Monitoring of remediation on Superfund land	- Road option will only impact a portion of the Superfund site and Chevron facility. - If needed, Woodward Road option (Alternative A) will relocate water lines and monitoring wells associated with remediation for the site.
Communities and land use	- Land use will not be significantly affected as it is primarily vacant land. - Preferred option is consistent with area planning and will conform to predicted growth of the area. - Extension will provide additional access to the area of the planned industrial corridor. - Preferred option will incorporate bicycle lanes and make provisions for future sidewalks
Socio-economics and environmental justice	- Residents will experience changes to traffic volumes (*see Traffic Congestion above*). Forecasted decreases in traffic volumes north of Woodward Road will result in an overall positive impact to these neighborhoods. - The preferred option is located within areas of Interstate highway right-of-way, vacant land, manufacturing, or special use zoned property, and is unlikely to disproportionately impact the neighborhood. - The project is not expected to impact community cohesion, displace people, or in other ways disproportionately and adversely impact minority or low-income populations.
Cumulative impacts	- Cumulative impact will be positive for economic growth *(see Economic Development).* - A cumulative impact to alternative transportation will result from the preferred option. - No significant cumulative impacts are anticipated from the preferred option.

IV. Findings

The HIA focused on how the proposed extension would affect three key areas:

- Exposure to environmental hazards
- Safety from injuries and collisions
- Social connectedness

In this section we describe findings related to each of these areas – how they relate to health, what the environmental assessment says, and resident panel analysis and discussion of potential effects of the proposed extension. Table 5 briefly summarizes our findings about existing conditions.

Table 5. Summary of Existing Conditions

Exposure to Environmental Hazards

Stationary Sources:

- San Jose has numerous facilities producing hazardous environmental emissions and a high density of those facilities compared to other census tracts in the county.
- As of July 2012, the City of Albuquerque had permitted 17 sites in San Jose as stationary sources of air pollution. Data on permitted emissions illustrate that San Jose makes up less than one percent of Albuquerque's total population, yet the neighborhood bears a disproportionate share of permitted emissions for seven of eight pollutants reported.
- In 2012, the South Valley air monitor registered levels of ozone and PM10 that exceeded both primary and secondary health standards.

Mobile Sources:

- Average weekday traffic in the project area is heaviest on the east-west corridor of Rio Bravo Boulevard – about 32,000 vehicles a day– at the southern section of the neighborhood, and south of the proposed project.
- Cars are the majority of vehicles on these roadways but there are a large number of heavy trucks on Broadway Boulevard.
- The project area does not appear to suffer from traffic congestion, with exceptions such as Rio Bravo Boulevard west of I-25.

Noise:

- Despite the presence of many sources of noise, data are not available on baseline noise levels.

Safety from Injuries and Collisions

Collisions:

- Collisions between automobiles and either pedestrians or bicyclists are relatively infrequent in San Jose. Those that do occur tend to cluster in the north edge of the neighborhood.

Facilities for pedestrians and bicyclists:

- Facilities for walking and bicycling in the neighborhood are scarce. The entire project area currently has only three blocks with designated bike lanes.

Social Connectedness

- Gathering places in and near the neighborhood include churches, community centers, homes of friends and family, schools, parks and playgrounds. Residents did not mention gathering at restaurants or other retail areas.

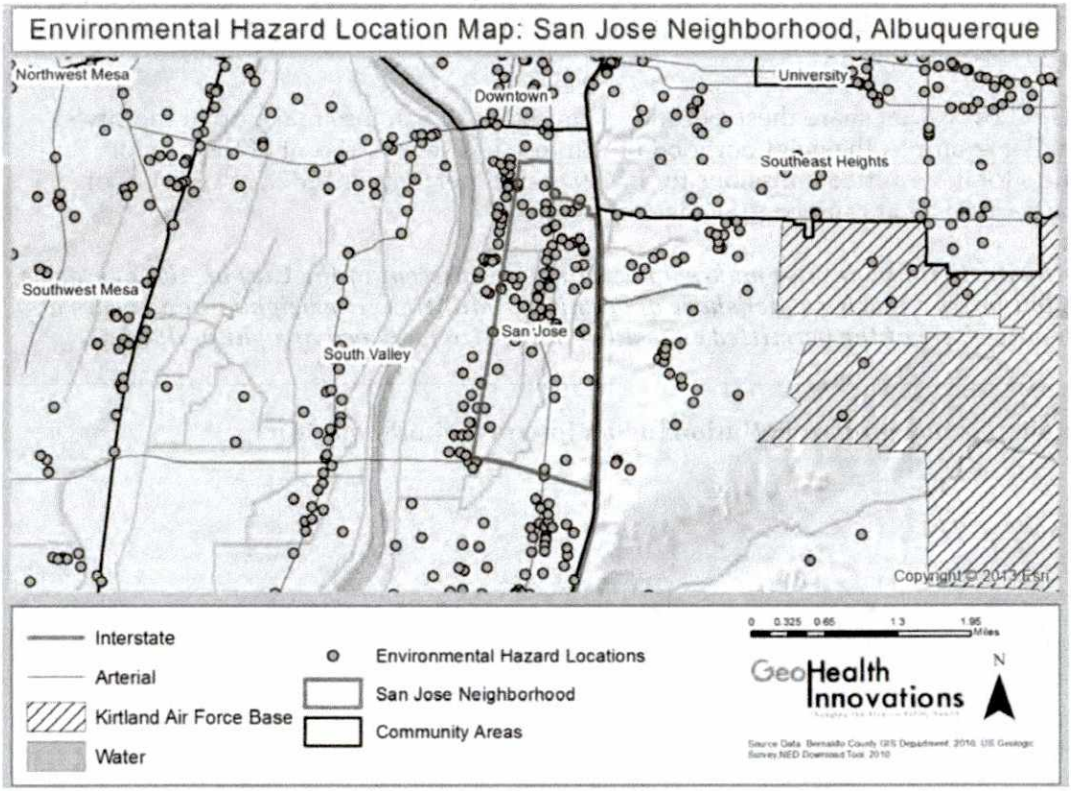
- Residents perceive the neighborhood as less close-knit today than in the past and as a place with a negative reputation owing in part to crime, which has decreased over time but remains relatively high.
- Residents want future development to protect and improve these gathering spaces, including parks and a health facilities and markets, schools and workplaces. They want to preserve and expand the ability to breathe and walk in the environment, safety from traffic and the scenery.

IVA. Exposure to Environmental Hazards

There is a wide range of potential environmental hazards in the neighborhood. Conventional practices in environmental hazards management address risks individually, segregating hazards from different chemical pollutants and from different exposure pathways. But human health depends on the cumulative effect of all exposures. As stated by Alves et al (2012):

> In reality, people are exposed to mixtures of pollutants or to the same pollutant through a variety of media, including the air, water, and food. It is now more recognized than before that environmental exposure to pollutants occurs via multiple exposure routes and pathways, including inhalation, ingestion, and dermal absorption.....Consequently, to arrive at a realistic assessment of exposure risks, regulatory authorities arguably should consider cumulative stressors and exposure data derived from cumulative risk assessment."

Map 5. Environmental hazard locations in San Jose, 2010



Map 5 shows numerous facilities producing hazardous environmental emissions throughout the neighborhood. Facilities include hazardous chemicals dumpsites, locations contaminated by hazardous materials, railroad depots, discharge permit locations, petroleum storage sites, industrial and manufacturing sites, stationary air pollution sources, Superfund sites, and interstates and arterial roads. The density of these facilities relative to the rest of the city and county is high: ***San Jose has a greater density of hazards per square mile compared to many other areas of the county.***

San Jose stands to benefit from a more holistic assessment of environmental and social risks. Given the area's many hazardous facilities, it is insufficient to only examine the incremental

contribution of a single project to the neighborhood's burden of environmental exposure and risk. Local agencies charged with analyzing proposed projects should consider how exposures from multiple sources may act together over time to expose residents to increased health risks.

With cumulative impacts in mind the next section describes conditions for various hazardous exposures in San Jose.

Existing Conditions: San Jose has a disproportionate burden of facilities producing hazardous environmental emissions

Air Quality: Exposure to Stationary Sources of Air Pollution
There are two key categories of sources for air pollution: stationary sources and mobile sources. Mobile sources include vehicles, such as cars, trucks or airplanes. Stationary sources are fixed sites such as factories or refineries.[45]

As of July 2012, the City of Albuquerque had approved permits for 17 sites in San Jose that are stationary sources of air pollution. As there is no data available on actual emissions for these sites, Table 6 below shows the total tons of pollutants (by type) permitted in the air quality permits issued for San Jose.

The table also shows what share these permitted emissions in San Jose make up of the city's overall total. For example, the neighborhood of San Jose has seven percent of the City of Albuquerque's total permitted emissions for PM10 and 11 percent for PM2.5, two types of airborne fine particles that can penetrate deep into lungs.

These data illustrate that San Jose makes up less than one percent of the City of Albuquerque's population, but bears a much greater share of permitted pollution. The neighborhood bears a disproportionate share of the permitted emissions in the city for seven of eight pollutants reported.

Map 6. Stationary sources of air pollution in San Jose neighborhood, 2010

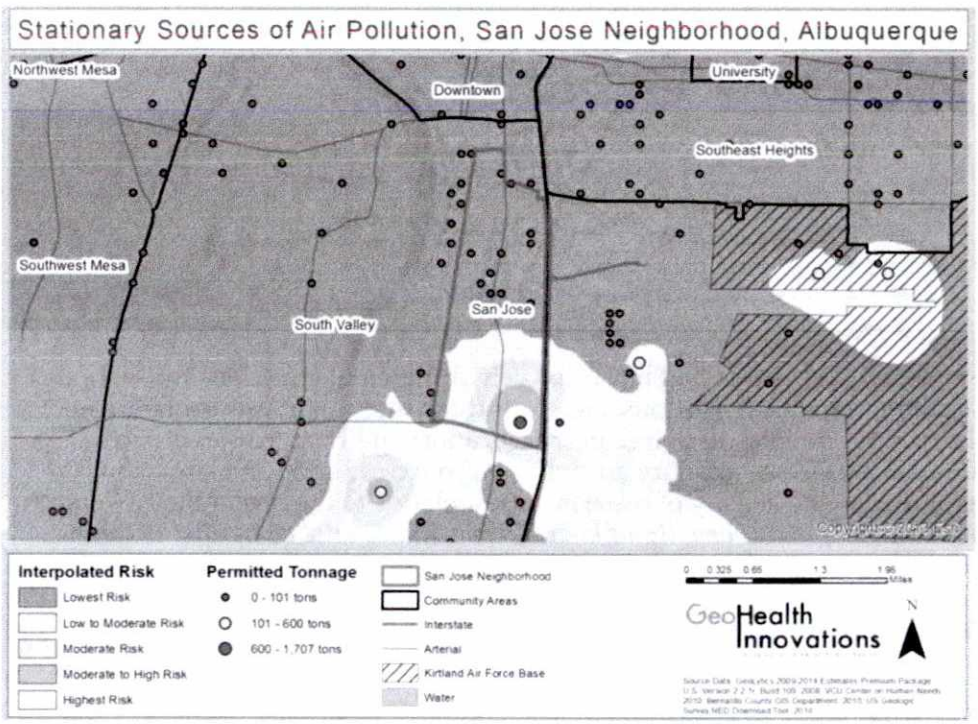


Table 6. Total tons of emissions allowed in San Jose and percent for City of Albuquerque, by pollutant, 2012

Particulate Matter 10 (PM10)	Particulate Matter 2.5 (PM2.5)	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Hazardous Air Pollutants (HAPS)	Sulfur Oxides (SOx)	Volatile organic compounds (VOCs)	Lead (Pb)
65.0 **(7%)**	57.0 **(11%)**	734.4 **(10%)**	571.3 **(7%)**	70.0 **(28%)**	76.8 **(11%)**	295.3 **(6%)**	0.0 **(0%)**
Source: City of Albuquerque Environmental Health Department, July 2012.							

Data from the Prosperity air monitor in the South Valley – the closest monitor to San Jose, about four miles away – show that the neighborhood has recently been subject to outdoor air concentrations close to or exceeding the maximum levels accepted by national air quality standards. In 2012, the South Valley air monitor on some days exceeded both the primary and secondary standards meant to protect public health and welfare for levels of ozone and PM10, respectively.[46,47] The violations have not been consistent enough for the area to merit the EPA's official designation of non-attainment for air quality. Nevertheless, the information here suggests attention should be paid to the high levels of these pollutants.

For the last decade, the South Valley monitor has registered ozone levels approaching the national standard for all of the last decade.[48] Additionally, according to EPA data, a recent spike in PM10 levels in San Jose cannot be explained by exceptional events such as wildfires or weather.[49,50] This information directly contradicts the environmental assessment's suggestion that the excessive PM10 levels can be attributed to fires and high winds. In the context of cumulative impacts,[m] additional development that even marginally exacerbates the ambient levels of these pollutants could exceed safe margins.

There were no violations in 2012 for ambient levels of carbon monoxide (CO), a main point of focus in an Air Quality Review report for the extension.[49] Bernalillo County had high concentrations of CO in the past, but has been in attainment since 1996. According to the EPA's national database, no area in the country has been under a non-attainment designation from CO levels since 2010, reflecting advances in emissions controls.[51]

Air Quality: Exposure to Mobile Sources of Air Pollution

Nationally, nearly 20 percent of the population lives near high volume roads where daily average traffic is 25,000 vehicles or more, and where the concentration of mobile source air pollutants is typically elevated, posing health concerns.[52] In the US, minority and low-income households are more likely to live near these high volume roads or in an area with higher traffic density than white or higher income populations.[52]

The neighborhood of San Jose is adjacent to I-25 and numerous arterial roads with heavy traffic. Data from MRCOG demonstrate that average weekday traffic in the project area is highest on the east-west corridor of Rio Bravo (approximately 27,000 vehicles), which is at the southern section of the neighborhood, and south of the proposed project. Traffic along Broadway Boulevard in the project area is highest north of Gibson Boulevard headed into downtown

[m] The EPA has proposed reducing the federal standard for PM2.5 to 12 $\mu g/m3$, following guidance from their scientific advisory committee. This is important because historic assessment of air pollution is based on prior standards. Assessment of future projects and conditions should be based on new standards that are coming into practice.

(17,000 vehicles), and is generally greater than traffic on Second Street. Traffic data for local roads are unavailable, and all of the roads between Second and Broadway Boulevard in and around Gibson Boulevard are considered local roads.[53]

In terms of what types of vehicles are traveling on these roads, MRCOG maintains limited vehicle classification data; only about 30% of traffic volume counts also collect vehicle classification counts. Table 7 reflects the total traffic volume by vehicle type for a very limited number of streets in the project area.

Table 7. Percent of traffic counts by vehicle type[54]

Street segment (year of count)	**Auto**	**Heavy trucks**	**Pick-up / Bus / 2-axle**	**Motorcycle**
2nd St, south of Avenida Cesar Chavez (2010)	65%	5%	29%	<1%
2nd St, south of Woodward (2012)	72%	4%	24%	<1%
Broadway Boulevard, south of Woodward (2011)	59%	11%	30%	<1%
Broadway Boulevard, north of Avenida Cesar Chavez (2009)	64%	8%	27%	<1%
Gibson Boulevard, west of I-25 (2010)	71%	7%	21%	<1%
Source: Mid-Region Council of Governments, 2009-2012.				

Most vehicles on these roadways are cars, but there is a large proportion of heavy trucks on Broadway Boulevard. Local residents say the official counts may undercount the trucks actually using these streets.

The environmental assessment listed traffic congestion as a main reason for the proposed extension. But the project area does not appear to suffer from traffic congestion, with a few exceptions, such as Rio Bravo Boulevard west of I-25. The MRCOG report "A Profile in Congestion" indicates:

- West of I-25, Gibson Boulevard has "minor" congestion
- West of I-25, Rio Bravo Boulevard has "severe" congestion to Second Street
- Second Street and Broadway Boulevard have no or minimal congestion

Planners expect Rio Bravo Boulevard will get more congested with future population growth. The level of congestion should be considered relative to the Albuquerque region and reflects conditions across the peak period only.[55]

Noise

Sound is frequently described in terms of peak levels or as an average over varying time periods. The City of Albuquerque Noise Ordinance[56] sets maximum allowable noise levels for residential areas as 55 A-weighted decibels, or dBA, in the daytime and 50 dBA at night (A-weighted decibels express the relative loudness of sounds. High frequencies, which our ears are more sensitive to, are given more weight.) For industrial areas the maximums are 75 dBA in the daytime and 70 dBA at night. Bernalillo County sets maximum levels for residential areas as 55 dBA in the daytime and 45 dBA at night, with the same higher levels for industrial areas as in the city. The County also has specific regulations for motor vehicles.

No noise data are available for San Jose. The environmental assessment identifies noise sources in the vicinity as traffic on I-25 and Broadway Boulevard, aircraft at the airport and Kirtland Air Force Base, trains on the rail spurs servicing the bulk fuels terminals, and noise associated with industrial and commercial activities of the area. Similarly, the Albuquerque/Bernalillo County

Comprehensive plan found excessive noise levels near several residential areas, specifically in neighborhoods near the airport, adjacent to I-25, by certain arterial streets, as well as industrial areas. However, staff at the city's planning and environmental health departments were unable to provide the data behind these findings or more recent information, highlighting an opportunity for stronger data collection and publication.

Why It Matters: Exposure to environmental hazards affects health and well-being, particularly for vulnerable populations

Exposure to Air Pollution

The EPA identifies six criteria air pollutants that can be detrimental to human health, and for which the EPA is required by the Clean Air Act to set standards to protect public health and welfare. They are ozone, carbon monoxide, particulate matter, nitrogen dioxide (NO2), sulfur dioxide, and lead. The EPA also identifies six priority mobile source air toxics but there are no standards for these contaminants, which include benzene, butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, and diesel exhaust.

Information about current levels of criteria air pollutants comes from a network of air quality monitors across the nation. Exposure to air pollutants at levels below existing standards also may result in health impacts for those with existing health conditions. The EPA regulates both mobile and stationary emissions of these pollutants. A 2013 study reported that that very few monitors used to enforce the priority air pollutant standards are located near populations along high-volume roadways, adding that although "current federal law requires 'hotspot' analysis for CO and PM2.5 when building new transportation infrastructure in non-attainment areas there is currently no method to enforce possible violations of the NAAQS alongside existing transportation corridors or in attainment areas lacking air quality monitors."[52]

Studies on the health effects associated with distance from traffic look at air pollutants as a mixture to examine their cumulative effects.[57] In 2008 a report by the Health Effects Institute concluded that current evidence is sufficient to say that exposure to traffic-related air pollution exacerbates asthma. The report adds that although evidence is yet sufficient, traffic-related air pollution could cause onset of childhood asthma, non-asthma respiratory symptoms, impaired lung function, and premature death.

Studies link vehicle emissions to lung disease;[58] asthma symptoms;[59,60,61] medical visits for asthma;[62] asthma prevalence and incidence;[63,64,65,66,67] and heart disease.[68,69] It's not yet possible to attribute the cumulative effects of roadway proximity and non-cancer health effects to one or more specific kinds of vehicles or pollutants. Table 8 is a summary of health effects of selected urban air pollutants relevant to the proposed extension.

Table 8. Summary of health effects of selected urban air pollutants relevant to Sunport

Pollutant	Examples of Sources	Health Effects	Maximum Allowed*
Nitrogen Dioxide (NO_2)	Combustion processes in vehicles and industrial operations	Increased risk of acute and chronic respiratory disease; reduced visibility.	100 ppb (1hr) 53 ppb (annual average)

Table 8 (continued)

Pollutant	Examples of Sources	Health Effects	Maximum Allowed*
Particulate Matter ($PM_{2.5}$)	Motor vehicles, fireplaces, cooking stoves, power generation, construction, and industrial activities	Impaired lung function; exacerbation of acute and chronic respiratory ailments including bronchitis and asthma; excess emergency room visits and hospital admissions; premature arteriosclerosis; premature death.	15 ug/m3 (annual average)
Diesel exhaust	Diesel engines	Probable increased risk of cancers (see: International Agency for Research on Cancer list for Group 2A substances). Health effects associated with particulate matter (see list above) that is emitted in combustion.	N/A

** Under Federal Air Quality Standards*

Air quality does not affect everyone the same way, and some groups are more sensitive to adverse health effects. Groups of people that are particularly sensitive to the health effects of air pollutants include the elderly and the young, those with asthma, and groups with other exposures linked to cardiovascular or respiratory diseases.[70] Poorer populations and people of color tend to live closer to sources of air pollution, and poverty may increase susceptibility to the health effects.[71]

Exposure to noise

According to the World Health Organization's Guidelines for Community Noise,[72] which reviews a substantial amount of the research on noise and health, long-term exposure to moderate levels of noise can harm sleep, school and work performance, raise blood pressure and increase the chance of cardiovascular disease. A significant body of research in that report and in other public health literature looks at traffic noise. According to the literature:

- *Sleep:* Traffic noise has been linked to poor sleep.[73] A lack of sleep may have consequences including fatigue, impaired endocrine and immune system and psychological effects.[74]
- *Annoyance:* Reports of annoyance are the most widely studied noise impact[75] and the relationship has been quantified.[76] Annoyance is related to several health effects associated with noise, including elevated blood pressure, circulatory disease, ulcer and colitis.[75]
- *Learning and educational performance:* Chronic road noise can affect cognitive performance of children, including attention span, concentration, memory and reading ability.[77,78]
- *Hypertension:* Traffic noise and high blood pressure have a dose-response relationship; increased traffic noise increases the likelihood and severity of high blood pressure. .[79] People who live near chronic road noise (more than 20,000 vehicles a day) are twice as likely to have hypertension – men almost four times as likely.[80]
- *Heart attack:* Increases in neighborhood noise, including traffic, at levels above 50 to 60 dBA increase the risk of heart attack.[81,82,83,84]

Review of Environmental Assessment: The assessment of impacts Sunport Boulevard Extension will have on air quality, noise and cumulative impacts is incomplete

Air Quality

The environmental assessment and accompanying air quality review state that the EPA designates Bernalillo County as an attainment area for all air pollutants identified in federal standards, and that previously carbon monoxide was the largest pollutant of concern in the county. However, the discussion of traffic-related air quality impacts focuses solely on carbon monoxide notably omitting nitrogen dioxide and PM2.5, which are associated with traffic. These could also be assessed to understand whether overall emissions and exposure levels may change. Focusing attention on a pollutant that is already successfully managed obscures more significant hazardous pollutants that are less well managed, including ozone and particulate matter.

Importantly, federal standards for maximum acceptable levels of both nitrogen dioxide and PM2.5 were recently lowered, reflecting scientific consensus that current standards do not protect health. While the county's modeling methodology for carbon monoxide is acceptable, there are no baseline monitoring data reported for any of these other pollutants, nor are traffic data modeled to show emissions for these pollutants in the future.

The additional discussion about industrial pollution in the air quality review states that industrial pollutants are a potential concern, but then places responsibility on the airport and other sources outside the project sponsor's control. Little data are presented to support this assertion. Also, there is no discussion in the original EA of how extension and associated development will contribute to air pollution. Nor is there discussion of whether the cumulative impact of these hazards will exceed existing standards.

Alleviation of traffic congestion in the region is argued as a main reason for the project. However, the environmental assessment does not provide any data to show existing congestion. The Mid-Region Metropolitan Planning Organization and Mid-Region Council of Governments of New Mexico identify a set of measures and criteria that are used to illustrate current congestion (volume-to-capacity ratio, speed differential, crash rates, daily volume, delay analysis).[35] Traffic volumes are the only data the assessment cites to support the assertion of current congestion. Also notable is that the original assessment only identifies congestion outside the project area, though MRCOG makes congestion data available for both Gibson Boulevard and Rio Bravo Boulevard (see above), two places in the project area but not included in the original EA.

Another reason for the extension, according to the environmental assessment, is to increase access to the airport via Sunport Boulevard to "[benefit] the proposed industrial corridor in the area and [provide] incentive for light industrial development."[36] The envisioned industrial development would be in the southern portion of the neighborhood, stretching from east of Second Street to west of I-25, and south of Woodward Road, along the neighborhood's more heavily trafficked streets. Any future plans, such as the proposed extension, must balance economic opportunity with protection of health and safety.

Noise

There is no analysis of current noise exposure in the environmental assessment, and therefore we are unable to say whether the area will comply with federal or local noise standards once the project is built. Also, as with all analyses in the environmental assessment, there is no discussion of the potential impacts that future development enabled by the extension will have on noise in the adjacent neighborhood.

Cumulative Impacts
Discussion of cumulative impacts of the project focuses on how the project will benefit the neighborhood by alleviating future congestion, improving the transportation network and future pedestrian/bike networks and encouraging economic and commercial growth. However, evidence is insufficient to support these assertions within the San Jose neighborhood.

The assessment also does not examine how changes resulting from the extension could have harmful cumulative impacts. For example, the report says the Sunport will enable economic development by providing access to businesses, but does not discuss how increased traffic, truck emissions, or other hazards might result. The original assessment states only that "No significant cumulative impacts are anticipated from the Preferred Alternative."

Furthermore, in describing recent projects in the area, the discussion only focuses on transportation-related projects and how those have improved the area. There is no recognition in the original EA of how transportation or land use (for example, the 17 permitted stationary sources of air pollution) has contributed to San Jose's status as an environmental justice community. Nor is there recognition of disproportionate environmental burdens that may be made heavier by the extension, or that existing air quality monitors may be insufficient to comply with recent EPA requirements that air monitors be located near highest, instead of average, source of pollution. Finally, there is no discussion of how the project may influence community exposure to multiple pollutants.

In sum, in the environmental assessment there seems to be a limited understanding of how to look at cumulative impacts. Various hypothesized benefits of the project are discussed as "a cumulative impact" in alternative transportation or in economic development. No supporting analysis or data are provided to show how these benefits may accrue.

Resident Analysis: Air quality and cumulative impacts are projected to worsen with the arrival of the Sunport Boulevard Extension

In reviewing the data, literature and analysis of the original environmental assessment, the resident panel reached consensus on the following set of findings for cumulative impacts and air quality. Though noise was important, the panel recognized there was very limited information on which to make judgments about how noise might change as a result of the project.

Consistent with thinking about cumulative impacts, the resident panel believed it was important to consider not only the contribution to environmental hazards of the proposed extension, but also of all the commercial and industrial development that would be enabled by it. To focus only on the effects of the extension itself would perpetuate the short-sighted pattern of failing to consider cumulative effects of environmental hazards.

In this context, the resident panel considered existing qualitative and quantitative information, as well as personal experience, to reach consensus about the impacts of the proposed extension and development spurred by it. Panel analysis includes the following:

- The evidence is *moderate to strong* that cumulative environmental hazards – and hence air quality – will worsen due to the Sunport Extension and all of the associated commercial development that will result from the Sunport being built.
- These increases are *certain,* as the Sunport will open the door to businesses locating in the area, with accompanying increases in trucks and other traffic.

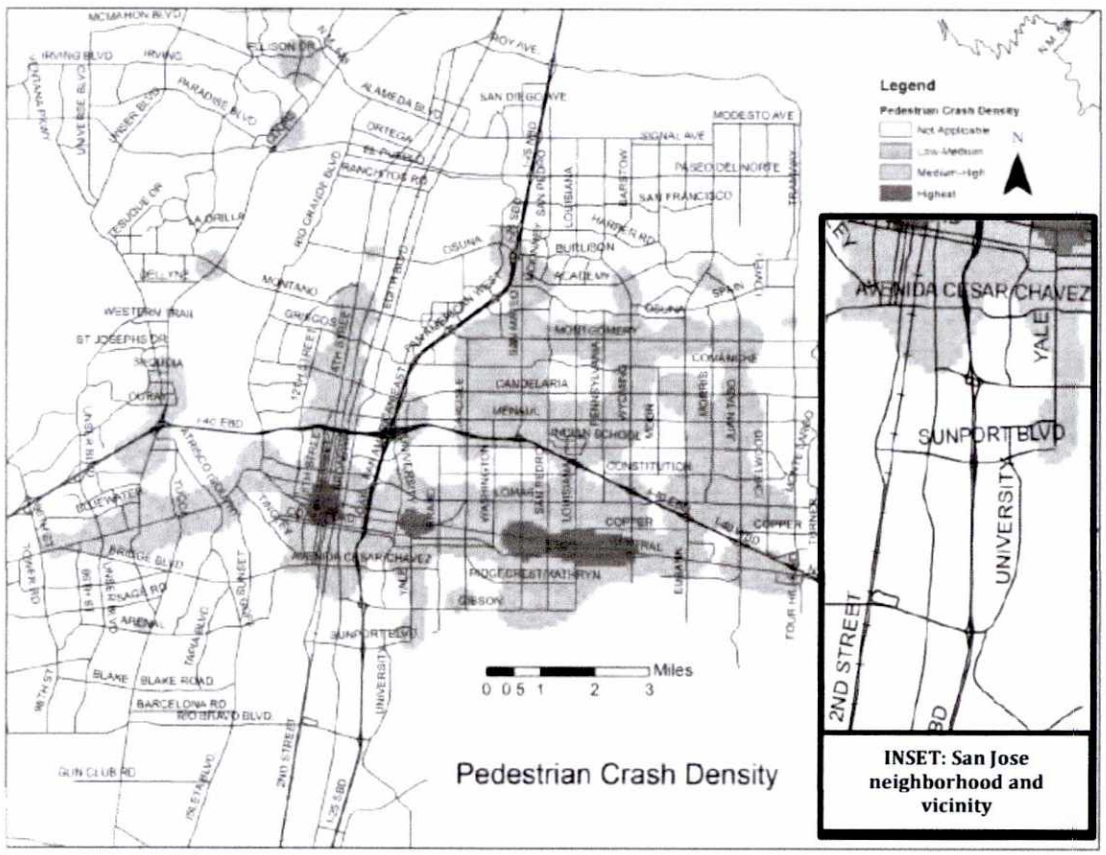
- Using the limited information available about future exposures, any increases in environmental exposures are *likely* to harm the health of residents, particularly those who are low income, the elderly and young, pregnant women and their unborn children, those living closest to the hazards, and those with underlying health conditions.
- Using the limited information available about future exposures, most people in San Jose – more than 70 percent – will be affected by these impacts, and the effects will range from *moderate to severe* depending on existing vulnerabilities.

IV.B. Safety from Injuries and Collisions

Existing Conditions: Pedestrian and bicycle crashes are relatively infrequent in San Jose, and facilities for walking and bicycling are scarce

Traffic-related deaths are slightly higher in the area that includes San Jose, as compared to Bernalillo County – 3.2 pedestrian deaths per 100,000 residents, compared to 2.7 per 100,000 in the county). In absolute numbers, there have been relatively few collisions between vehicles and pedestrians reported in recent years in San Jose. Map 7 shows where crashes involving pedestrians cluster in Albuquerque. In San Jose, the north edge has a low-medium cluster and elsewhere in the neighborhood there are no clusters recorded for crashes involving pedestrians.

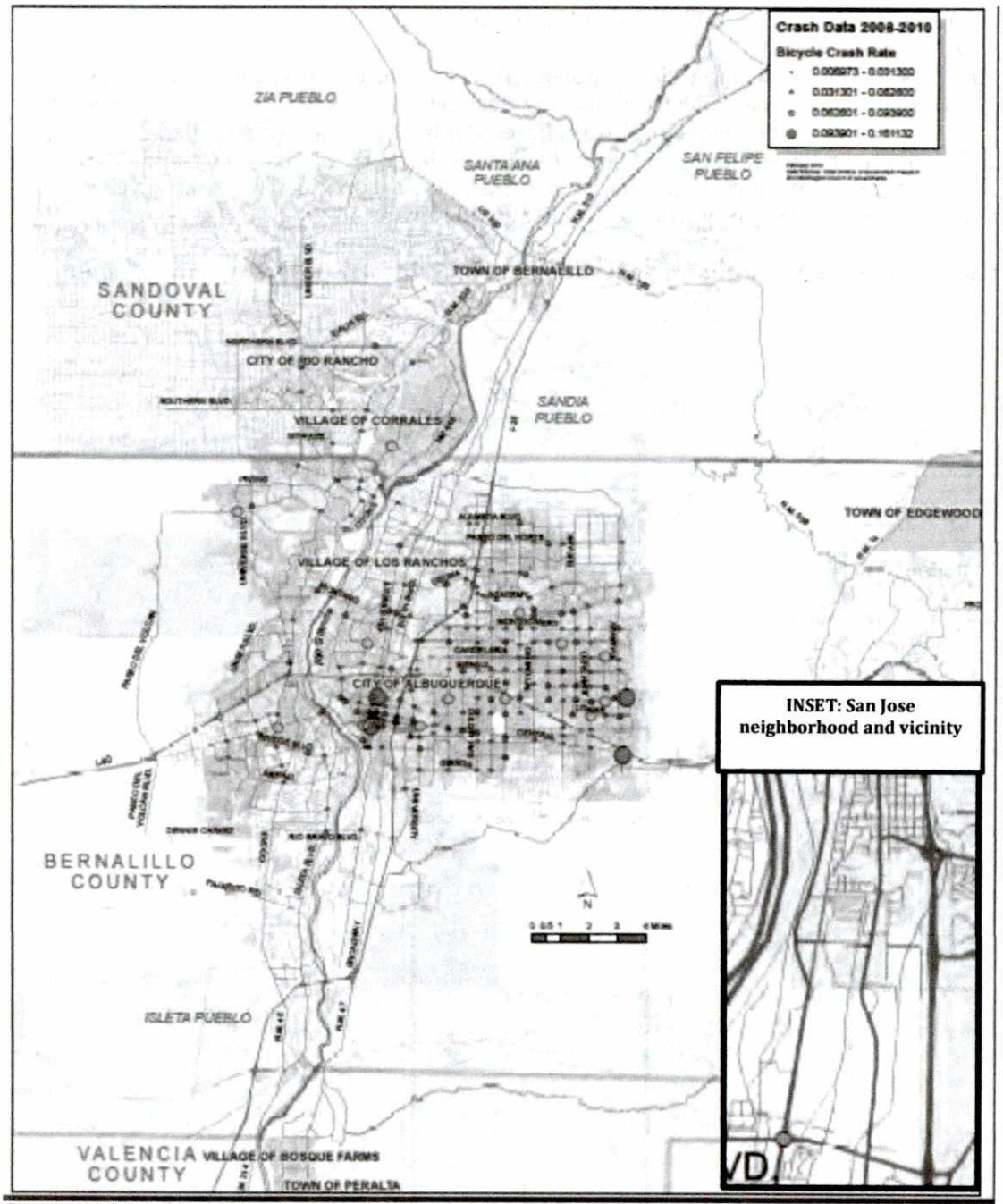
Map 7. Pedestrian crash density, 2000-2010



Source: Adapted from Mid-Region Council of Governments, July 2012.

A relatively low rate of crashes involving bicyclists is reported for San Jose compared to the county. Map 8 shows the intersection of Rio Bravo Boulevard and Second Street, where crashes tend to occur in the project area.

Map 8. Bicycle crash rate, 2006-2010



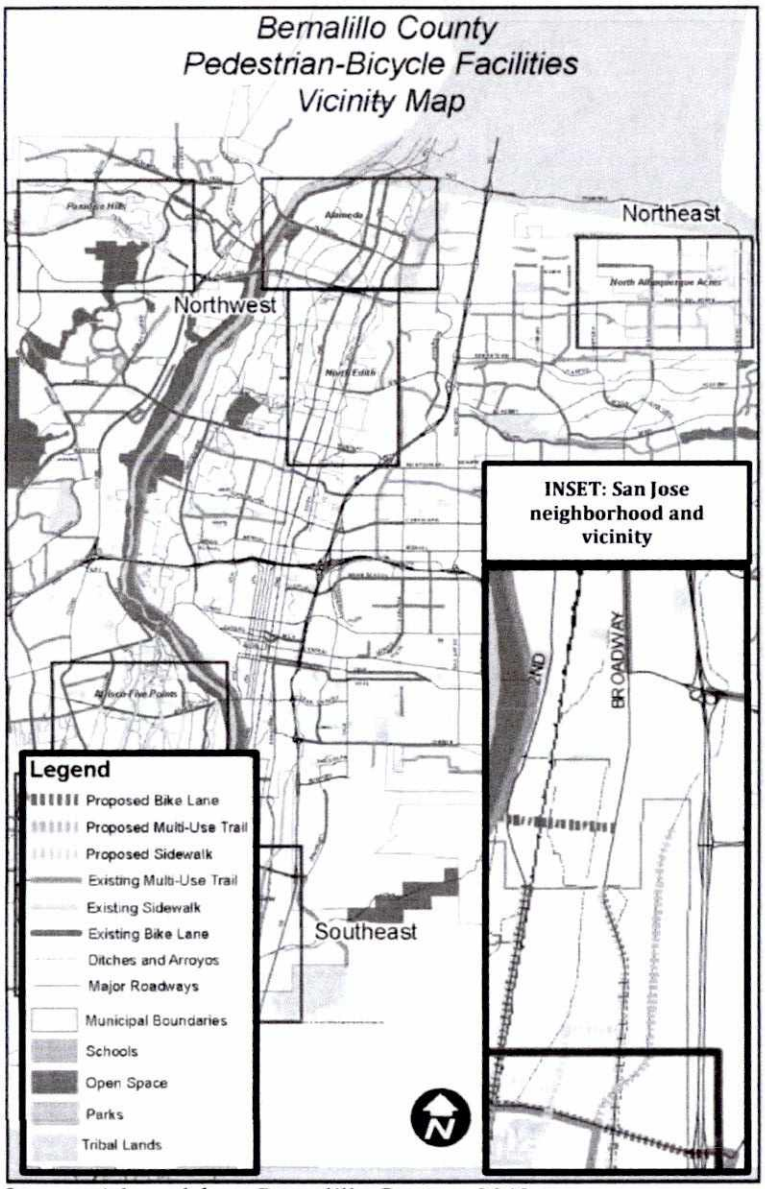
Source: Adapted from UNM Division of Government Research and Mid-Region Council of Governments, February 2013.

A chief cause of crashes is the absence of facilities for pedestrians and bicyclists, such as sidewalks and bicycle lanes. There are few sidewalks or designated bike lanes in the neighborhood, and little connectedness between those that do exist, as illustrated in Map 9. The project area currently has three blocks with designated bike lanes (on Broadway Boulevard from Kathryn Avenue to Gibson Boulevard). There are additional spaces for bicycling, but they

are not designated lanes. In these instances, cyclists are given a wide shoulder (as on Rio Bravo Boulevard), or can ride on what's known as a bike route, designed with the intention that bicyclists and cars share it (as for 3 blocks on Edith Boulevard).

Among facilities that do exist, access is a problem. To get to these spaces, bicyclists who start in the neighborhood ride with cars on streets lacking designated lanes, wide shoulders, or bike routes. Access also is an issue for the multi-use Paseo del Bosque Trail – also called the Riverside Bike Path – adjacent to the Rio Grande. For residents of San Jose, the trail is west of Second Street, so they have to cross the railroad tracks and property and walk or bicycle to an access point, such as the heavily trafficked Rio Bravo Boulevard.

Map 9. Current and proposed future pedestrian and bicycle facilities in Bernalillo County

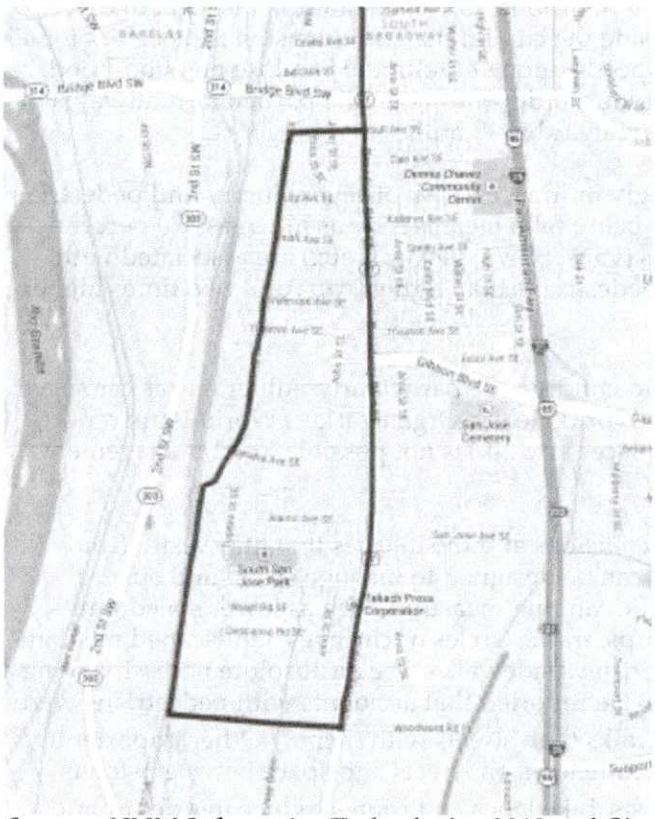


Source: Adapted from Bernalillo County, 2012.

Why It Matters: Safety affects use and the health benefits from it

People walk or bicycle for various reasons, including recreation, to get to work and school or to run errands, or as part of a journey that also includes trains or buses. For some, particularly those without access to private vehicles, walking, bicycling and/or public transit become important means of transportation. This is the case in San Jose, where approximately one in 12 residents do not have access to a car. One in 16 use public transportation to commute to work – a proportion three times higher than in the county as a whole. Four bus routes serve San Jose, though only one (the 16/18 "B-U-G") goes downtown every day. The route in the neighborhood follows a loop through the neighborhood that includes more heavily–trafficked streets, such as Woodward Road and Broadway Boulevard, so that users must walk or bike on or across these streets to reach the bus stops.

Map 10. Bus route for Route 16/18 in the San Jose neighborhood



Sources: UNM Information Technologies, 2013 and City of Albuquerque, 2012.

People also walk or bike if there are "trip attractors" – schools, parks, healthcare institutions, restaurants, grocery stores or childcare. According to the Mid-Region Council of Governments, "In general there is a scarcity of restaurants, grocery stores, and other retail that is associated with generating pedestrian activity" in the San Jose neighborhood.[86]

Walking and bicycling are good for public health. Physical activity can help prevent or treat overweight or obesity; reduce risk of chronic diseases, such as cardiovascular disease, type-2 diabetes, and some cancers; improve mental health; and increase chances of living longer.[87] Walkable neighborhoods are more likely to meet national physical activities guidelines compared to the least walkable neighborhoods.[88]

It is important, then, to understand factors that may promote or threaten safety from injury for pedestrians or bicyclists. Key factors are the speed of traffic, types of vehicles, characteristics of the user, and road design.

A 2004 report by the World Health Organization and World Bank finds "a large amount of evidence of a significant relationship between average speed and crash risk."[88] Specifically, for every 1 kilometer per hour (approximately 0.6 mph) increase in traffic speed, there is a four to five percent increase in fatal crashes.[89] A pedestrian has a 90 percent chance surviving a car crash if the car is traveling 30 kilometers per hour (approximately 18 mph) or less. That pedestrian has a less than a 50-50 chance of surviving if the car is traveling 45 kilometers per hour (approximately 28 mph) or more.[89]

The speed of cars on the extension and adjacent roads are important to collisions and resulting injuries to pedestrians and bicyclists in the neighborhood. On Interstate 25, it is legal to drive 75 mph outside of Albuquerque, and 65 mph inside the city limits. The extension is designed for 45 mph, so drivers will have to quickly reduce speeds upon entering the San Jose neighborhood. Speeds within the neighborhood are further reduced depending on the particular roadway. For example, currently the speed on Broadway Boulevard is 40 mph.

Research finds that the type of vehicle "strongly influences" risk of severe injury and pedestrian death.[90] The chance of a vehicle-related injury being fatal increases by as much as 370 percent when the vehicle is a truck.[91] Even light trucks (vans, SUVs, pickups, etc.) are associated with three times higher risk of severe injuries for pedestrians than lighter cars, and two times higher mortality rates.[36]

The pedestrian matters, too – older people and children are particularly vulnerable as car speed increases. Road design also is important. The World Health Organization/World Bank report, "If separation (giving pedestrians protected places to walk) is not possible, road management and vehicle speed management are essential."[92]

Good planning now can help prevent future collisions and the injuries that may result from them. The extension and surrounding streets can be designed to manage speed and ensure safety for pedestrians and bicyclists with traffic calming measures such as lower speed limits, more signals, sidewalks, bulbouts, speed bumps, traffic circles or chicanes, landscaped medians and marked pedestrian crosswalks. One expert says sidewalks "are an absolute necessity along all through-streets serving developed areas."[93] He reported that accidents with pedestrians were 2.5 times more likely on streets without sidewalks than streets with them.[93] Other important features that can increase a sense of safety include trees on streets and space between streets and sidewalk, as by parked cars.[93] For bicyclists, bike lanes and routes reduce injuries or and crashes by half compared to roads without them.[94]

Review of Environmental Assessment: The extension includes short stretches of sidewalks and a bicycle lane that will be isolated from the few existing facilities in adjacent areas, and impacts to bus access are not discussed

Impacts to Pedestrian and Bicycle Facilities
The preferred Woodward Road option would include 700 feet of sidewalks along the half-mile extension that will not connect to existing sidewalks. The same preferred option also includes a five-foot wide bike lane on each side of the extension. The environmental assessment does not say if the bicycle lane will run the entire length of the extension. The bike lanes will connect to

Broadway Boulevard and University Boulevard, but since those stretches of those two streets have no direct connectedness to other bike lanes, they would be isolated.

The assessment does not predict how the extension may change traffic volumes, collisions, or the usability of adjacent streets for pedestrians or bicyclists.

Impacts to Bus Access
There is no mention in the environmental assessment of how the extension would affect resident's access to bus stops and buses.

Resident Analysis: Pedestrian and bicyclist safety on nearby streets will decrease

In reviewing the data, literature and environmental assessment, the resident panel reached consensus on the following findings for safety from injuries and collisions. Overall, the panel seeks to maintain the relatively low number of deaths and to prevent future collisions, and residents agreed that safety from injuries and collisions is already a problem in San Jose. Panel analysis includes the following:

- The evidence is *likely, but more information is needed* that the extension will *decrease* safety on nearby streets. It will be more dangerous for pedestrians and bicyclists if the proposed extension is built as planned.
- Decreases in safety are *likely* to harm the health of residents, particularly those who are low-income, bus users, people lacking access to cars, children who walk or bicycle to school, and bicyclists.
- Most people in San Jose will experience these changes, and the associated health effects will range from *not severe* to *moderate*.

IV.C. Social Connectedness

Existing Conditions: Residents gather in both public and private spaces in the neighborhood and nearby and want to protect and improve these spaces

Social connectedness among residents of a given community is a measure of solidarity and the ability to translate social ties into common good.[95] Limited information is available on the social fabric of San Jose today. To fill this gap, we used qualitative research methods with a photo and mapping activity to gather input from the resident panel, based on their personal experiences.

Resident panelists had various perspectives about whether social connectedness is an issue today for the San Jose neighborhood. The panel agreed that whether residents feel that social connectedness is lacking depends on one's experiences, age, and where in the neighborhood one lives. Residents perceive that the neighborhood is less close knit now than in the past and that the neighborhood has a negative reputation, owing partly to crime, which remains relatively high although it has decreased over time. Some residents said they felt safe at night; others did not.

All residents on the panel agreed that social connectedness is valuable. They also agreed that future activities that directly or indirectly affect the neighborhood should seek to improve social connectedness.

Answering two sets of questions about San Jose today, residents wrote responses that Human Impact Partners then grouped into themes. We found two main themes. First, residents gather in an array of places in or near the neighborhood, including private spaces like churches or homes of friends and family as well as public spaces like community centers, schools, parks or playgrounds. Second, residents want to protect and improve several aspects of the neighborhood – health facilities, markets, schools, workplaces, the ability to breathe and walk outdoors, safety from traffic, and the scenery.

Asked where residents gather, many named private spaces such as churches or homes, including the San Jose Parish as well as churches outside of San Jose. Churches were described as "the place community gather to worship-pray & grow in their faith," with others calling them "cultural assets to protect" and special places that represent the community or that "represent my people." One resident also spoke about access to church, wishing *"to be able to drive to the church, but more to be able to walk to the church and not breathing all those chemicals."* Homes of friends and family, again both inside the San Jose neighborhood and elsewhere in the city, are places that residents visit, eat, talk, and celebrate. No residents mentioned gathering socially at sporting events or arts events – two measures used in City of Albuquerque's Citizen Perception Survey to assess quality of life. Neither did they mention gathering at restaurants or bars.

Public spaces where residents mentioned gathering include the Herman Sanchez Community Center and public parks, though with reservations. Of the community center, one resident said it was a "good source of community" and multiple comments noted that children, in particular, use the center. One observation included, *"People take their children to the after/before school program - so their child does not go to an empty house after school."* In describing parks, residents identified them as places to gather for celebrations or for children to play, and expressed concerns about the safety of parks in the San Jose neighborhood. Comments included, *"[The parks] do not feel safe. Not clean,"* and one resident described going to a park outside of the San Jose neighborhood, saying it is far but that they do so because of problems in San Jose.

Looking at the other main theme about what residents want to protect and improve, physical aspects were mentioned. Residents want to protect health facilities and markets, as well as jobs and schools. Comments included, *"Protect health facilities,"* and *"we need to have an opportunity to excel learn and bloom."* Of jobs, one resident also said, *"we need to hire even those with a criminal conviction."* About aspects to improve, they included both daily needs and conditions in the physical environment of the neighborhood. One resident said, "[*Market*] *is needed.*" Speaking to neighborhood conditions, residents said currently, the trains' contamination and noise affects the ability to breathe and walk in the area, identifying it as an area for improvement: "*[Improve] Because of the noise. Because the black powder enters the house.*" Two powerful statements from residents capture the sentiment well. They said, *"Our view of the scenery is sacred"* and *"We need to protect the health safety lifestyle of the people that live in the community."*

Why It Matters: The social fabric of a neighborhood is associated with myriad health-related factors

Social connectedness shapes factors that influence individual health behaviors and ultimately health outcomes. It is a buffer to stress and influences health status itself.

A 1998 study using national data reported that higher levels of social mistrust were associated with higher levels of violent crime involving guns.[95] The relationship also went the other way: Neighborhoods with higher rates of group membership had lower levels of gun crimes.[96]

Neighborhood social connectedness influences individual behaviors. In a 2008 study of six U.S. communities, less socially cohesive neighborhoods were associated with behaviors like increased depression, smoking, and not walking for exercise. The study adjusted for a bevy of factors like socioeconomic characteristics, neighborhood problems, and race and ethnicity.[97]

Social connectedness or social capital – the benefit gained through cooperation – also influences individual health outcomes. Research has shown that social capital is associated with lower levels of general health and well-being, lower cardiovascular and cancer mortality, lower suicide rates, and lower rates of violent crime.[98]

This also is reflected in the relationship between social connectedness and overall health. A 2006 journal article found that people who reported a severe lack of social support were more than twice as likely to report fair or poor health than people who said they did not lack social support.[98] Looking at it another way, people living in communities with high levels of social trust are four times less likely to report fair, bad or very bad health than people living in communities without it.[98]

The effect of social capital on health may vary with income level. A systematic review of literature on the interactions between social capital and socioeconomic inequalities found evidence in a dozen studies that social capital might buffer negative health effects of low socioeconomic status and in five studies that social capital has a stronger positive effect on health for people with a lower socioeconomic status.[99]

Review of Environmental Assessment: There is no analysis of impacts to social cohesion or connectedness

The environmental assessment report says: "The project is not expected to impact community cohesion . . . " It continues by describing topics covered elsewhere in this report, such as impacts to minority or low-income populations, but offers no evidence to support the assertion on cohesion.

Resident Analysis: The extension is unlikely to affect overall social cohesion

Based on personal experiences, residents predicted that social connectedness is likely to stay at the same level of low importance to the neighborhood if the proposed extension is built. One resident suggested that the extension could marginally bring together the neighborhood around efforts to understand and improve the project. However, the group said that it does not anticipate changes to social connectedness from the project. Residents added it is important in any future projects to protect and improve the places where people gather.

V. Recommendations For Sunport HIA

The recommendations below come from a variety of sources. Fourteen were developed by the HIA resident panel in response to their analysis of the impacts of the first environmental assessment released in September 2011. They are included here because they continue to be relevant to the significant issues that remain in the REA (as described in this document).

In making these recommendations, we take a broad perspective that includes both the half-mile extension itself and the future economic development that will follow. As such, many recommendations would be implemented after the proposed extension is built, and with an emphasis on preventing future environmental hazards.

Overall

1. The county should more thoroughly and transparently reconsider Alternatives D and H, not only Alternative A, and mitigations.

2. The city and county should improve public information-sharing about the proposed extension and related planning. Specific actions include:
   a. Publicly share plans to meaningfully involve the San Jose neighborhood in ongoing planning for the Sunport Boulevard Extension, to ensure that resident perspectives help shape future development.
   b. Increase communication between city and county, as well as directly to residents, including but not only through the San Jose Neighborhood Association, and ensure communication is in culturally appropriate methods and languages. Publicly and immediately share formal and informal plans for the extension and development in the surrounding area. Specifically, share information on whether there is a vision – and what it is – for promotion of commercial and industrial development along the extension, such as zoning documents or plans ranging from the short-term to long-term (e.g., five-year plans, thirty-year plans, and so forth).

If the Sunport Boulevard Extension is built:

Environmental Hazards

3. The city and county should require that future permitting processes for the San Jose neighborhood include the completion of cumulative impact assessments that more accurately consider health impacts. Cumulative is defined in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects.*

4. The City of Albuquerque Air Quality Division should improve air quality monitoring and enforcement of existing air quality regulations in the San Jose neighborhood as follows:
   a. Collect baseline information throughout the neighborhood on actual air quality emissions. If the information is collected by City or County agencies, it should be validated by outside organizations.
   b. After the extension is completed, regularly monitor air quality at sensitive sites such as schools and community centers. Commit to retrofitting these facilities (e.g., provide upgrades to building thermal performance and ventilation systems) to keep indoor air pollutant levels below applicable state and federal standards, and mitigate exceedances found at baseline levels, if pollution levels surpass what is harmful to human health.

c. Add an air monitor in San Jose where vulnerable populations congregate. The monitor should measure the six criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead), as well as volatile organic compounds.

5. The city and county should ensure compliance with and enforcement of existing noise standards. To do so, the city and county should collect baseline noise measurements in the community of San Jose to ensure standards are not being exceeded.

6. The city and county should consider revising noise control ordinances to set the standard for traffic-related noise, at 65 dBA or less for daytime and 55 dBA or less for nighttime.

Safety from Injuries and Collisions

7. The city should prohibit heavy trucks on residential streets in San Jose neighborhood.

8. The city and county should implement appropriate traffic calming features to slow trucks on roads that will see increased traffic from the Sunport Boulevard Extension.
   a. Examples of traffic calming to consider are reduced speed limits, rumble strips, and landscaping.
   b. Example locations for reduced speed limits are Broadway Boulevard traveling down the hill by Bethel Avenue and San Jose Avenue.

9. The city and county should create facilities to protect and encourage pedestrians and bicyclists on roads near the Sunport Boulevard Extension that will experience increased traffic during and after its construction. Actions include:
   a. Building sidewalks with storm drainage. Example locations are Broadway Boulevard headed to Woodward Road, on Wesmeco Drive, on Arno Street, and John Street.
   b. Extending the bike lane on Broadway further into the San Jose neighborhood.
   c. Adding traffic lights at the intersections of William Street and Woodward Road, as well as Second Street and Woodward Road.[c]

10. The City of Albuquerque Transit Department should ensure that the 16/18 bus route is maintained during and after construction of the Sunport Boulevard Extension. Also, the city should build bus shelters where the bus is used but there are not currently shelters to protect riders – for example, on William Street, Woodward Road, and Broadway Boulevard.

Miscellaneous Recommendations

11. Bernalillo County Public Works should include drainage facilities when building the Sunport Boulevard Extension.

12. To advance the economic prosperity of residents in the San Jose neighborhood, the Bernalillo County Economic Development Department should require businesses locating along Sunport Boulevard Extension to develop plans and commitments for local hiring, job training, and educational programs. For example, the city and county could work with businesses to start a GED program with instructors in the community that is free for low-income residents of the San Jose neighborhood.

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[c] Two members of resident panel abstained from this vote

13. To ensure San Jose residents are actually able to access workforce development and job training programs as well as access new jobs created in the community, the Bernalillo County Economic Development Department should require that businesses locating along Sunport Boulevard Extension *not ask* about applicants' history of arrest in job applications and interviews.[4]

14. The Bernalillo County Economic Development Department should establish a living wage (e.g., modeled on the living wage ordinance in Santa Fe) and require jobs created by businesses relocating or locating along the Sunport Boulevard Extension to pay such wages. In addition to paying a living wage, all permanent jobs (including part-time and full-time permanent jobs) created by business located near the extension should provide full health benefits.

Additional Recommendations
At the conclusion of the HIA process, the Steering Committee and project partners proposed additional recommendations to supplement those from the resident panel. These recommendations were not vetted in the same way, but are listed here as they provide valuable suggestions for appropriate parties to consider as well.

They include:

- Consider completing an Environmental Impact Statement to more fully assess the environmental impacts of the extension on environmental and human health, including reasonable alternatives (including a No Action alternative) that would avoid or minimize adverse impacts or enhance the quality of the human environment.

- The county, MRCOG, or other appropriate party should do a comprehensive traffic study that includes roadways connected to or near the extension that will be affected by it. The study should assess changes in traffic and how those are expected to affect air quality and noise. The study should consider potential short-term and long-term development (e.g., five-year plans, thirty-year plans, and so forth) that will and/or could take place if the extension is built.

- Absent discussion of cumulative impacts in this document, planning agencies and other authorities could consider a moratorium on approving projects that will result in new environmental hazards in the community.

- The city and county should draft relevant plans and commit funding to ensure pedestrian- and bicycle-safety measures and improvements on roadways such as Second Street that connect to the extension and will experience increased traffic or congestion, regardless of the alternative chosen. Plans should redesign these roadways for neighborhood pedestrian, bicycle, and vehicular safety, and to avoid increased cumulative air emissions. This should be done prior to completion of the extension in this environmental justice community.

- A specific way to implement the Steering Committee recommendation about public input is for the county to form and fund a Community Advisory Council that regularly provides input and feedback on plans for the proposed extension.

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[4] There was not unanimous agreement on this proposal; however, the majority of residents on the resident panel voted in favor of it.

- Improvements to pedestrian and bicycle facilities on adjacent roadways that the extension will affect, such as Woodward Road, should be put in place when the extension is built.

- The County should consider building sidewalk adjacent to the entire length of the extension, rather than for only 700 feet.

- The appropriate body should provide voluntary relocation of residents living in housing that is the closest to the extension.

- The appropriate body should involve impacted residents in identifying requirements for developments within the boundaries of the Design Overlay Plan.

VI. Conclusion

This HIA shines a light on numerous environmental and social conditions – including environmental exposures, safety, and social connectedness – in the San Jose neighborhood that could be affected by the proposed extension. In light of these findings and based on their own experiences in the community, residents are definite in their belief that air quality and safety will worsen as a result of the extension and the industrial and commercial development that will follow.

Numerous questions remain for the residents of San Jose: Are the purpose and need for the project transparent and being met? Will the Sunport Extension be further developed to the west of Rio Grande? Will new environmental hazards be introduced? What benefits will residents experience? Will community health and exposures get worse or better? What will the city and county do to protect the most vulnerable?

The community engagement process for the extension and the draft environmental assessment leave these questions unanswered, and have not facilitated trust within the community that such issues will be addressed in the future. Consequently, we suggest a more precautionary approach for the city and county. We propose a set of recommendations to mitigate the potential harms that may result from the extension and the development it will enable, as well as a series of recommendations that create opportunities for improved heath and well-being for the residents of San Jose. Over time, we intend to monitor whether these recommendations are adopted and implemented in response to the concerns raised herein.

As project proponents, the City of Albuquerque and Bernalillo County have a duty to consider how residents and neighborhoods will be protected from new harms that result from the development they advocate. With San Jose's long and well-known history of environmental hazards and poor health, now is an opportune time to consider whether a *no new hazards* approach is warranted for the neighborhood. Such an approach would begin the process of reassuring community members that their health and well-being – now and in the future – are valued and prioritized in the community they call home.

VII. References

[1] Quigley W. "Area's Industrial Legacy Poses Health Risks." *Albuquerque Journal*. March 18, 2013. Available at: http://www.abqjournal.com/179609/biz/areas-industrial-legacy-poses-health-risks.html. Accessed September 28, 2013.

[2] US Environmental Protection Agency. 2013. South Valley (Bernalillo County), Albuquerque, New Mexico. Available at: http://www.epa.gov/region6/6sf/pdffiles/south-valley-nm.pdf. Accessed September 3, 2013.

[3] US Geological Survey. 2006. Volatile organic compounds in the nation's ground water and drinking-water supply wells – a summary. Available at: http://pubs.usgs.gov/fs/2006/3048/pdf/fs2006-3048.pdf. Accessed September 30, 2013.

[4] Uyttebrouck O. "GE to Clean S. Valley Site." *Albuquerque Journal*. August 8, 2009. Available at: http://www.abqjournal.com/news/metro/0812109metro08-08-09.htm. Accessed October 10, 2013.

[5] Agency for Toxic Substances and Disease Registry. Toxicological Profile for Wood Creosote, Coal Tar Creosote, Coal Tar, Coal Tar Pitch, and Coal Tar Pitch Volatiles. 2002. Available at: http://www.atsdr.cdc.gov/toxprofiles/tp85.pdf. Accessed September 30, 2013.

[6] US Environmental Protection Agency. 2013. AT&SF Albuquerque Superfund Site, Bernalillo County, South Valley Area, New Mexico. Available at: http://www.epa.gov/region6/6sf/pdffiles/atsf-albuquerque-nm.pdf. Accessed September 30, 2013.

[7] Faber DJ. 1998. The Struggle for Ecological Democracy: Environmental Justice Movements in the United States. New York, NY: Guilfod Press.

[8] Southwest Research and Information Center. Richard Moore on Environmental Justice and the New Mexico Environment Department. Available at: http://www.sric.org/voices/2005/v6n2/r_moore_2005.php. Accessed September 30, 2013.

[9] Meiklejohn D, Padilla P, Jantz E. 2007. Environmental justice in New Mexico: Efforts and successes in litigation, the legislature, and administrative rule-making. The State of Environmental Justice in America 2007 Conference.

[10] Carlson C. "Groups Reach Deal in Superfund Case." *Albuquerque Journal*. January 12, 2006. Available at: http://www.abqjournal.com/news/metro/424021metro01-12-06.htm. Accessed September 30, 2013.

[11] Abeyta E, Richards K. Disparities, Place, and Health. 2011. Presentation at New Mexico Environmental Health Association Conference. Available at: http://www.nmeha.org/Resources/Documents/Health%20Disparities%20in%20San%20Jose%20Kitty%20and%20Ester.pdf. Accessed September 30, 2013.

[12] Amigos Bravos. 2013. Building a Rivers Movement. Available at: http://amigosbravos.org/building-rivers-movement#. Accessed September 30, 2013.

[13] Rodriguez J-C. "Air Quality Panel Eyes "Environmental Justice."" *Albuquerque Journal*. November 14, 2008. Available at: http://www.abqjournal.com/riorancho/14121006596west11-14-08.htm. Accessed September 30, 2013.

[14] Olson E. 2003. What's on Tap? Grading Drinking Water in U.S. Cities. Available at: http://doultonusa.com/grading_drinking_water_us_cities.pdf. Accessed September 30, 2013

[15] Zoll MH, Boyce JK. 2003. The New Environmental Activists. Available at: http://www.peri.umass.edu/fileadmin/pdf/New_Environmental_activists.pdf. Accessed September 30, 2013.

[16] Cohen TM, Bleaky DR. 1997. Addressing Environmental Justice Under the National Environmental Policy Act at Sandia National Laboratories/New Mexico. Available at: http://www.osti.gov/scitech/servlets/purl/477673. Accessed September 30, 2013.

[17] US Environmental Protection Agency. 2002. Record of Decision, AT&SF Albuquerque Superfund Site, Albuquerque, New Mexico. Available at:

http://www.epa.gov/region6/6sf/newmexico/atsf/nm_atsf_rod_200206.pdf. Accessed September 30, 2013.
[18] Wright M. 2012. "Esther and Steven Abeyta." *alibi.com*. Available at: http://alibi.com/feature/41341/Esther-and-Steven-Abeyta.html. Accessed September 30, 2013.
[19] Garcia E. 2012. "South Valley Woman Fighting for Better Air Quality." *KOB Eyewitness News*. Available at: http://www.kob.com/article/stories/S2819327.shtml. Accessed September 30, 2013.
[20] Breathe In New Mexico. 2013. San Jose Data Update. Available at: http://www.breatheinnm.org/?p=332. Accessed September 30, 2013.
[21] American Community Survey. Table DP-5. Demographic and Housing Estimates. 2007-2011, 5-year estimates. Census Tract 13, Bernalillo County, New Mexico.
[22] American Community Survey. Table DP-3. Selected Economic Characteristics. 2007-2011 American Community Survey 5 year Estimates. Census Tract 13, Bernalillo County, New Mexico.http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_DP03&prodType=table
[23] American Community Survey. Table DP-2. Selected Social Characteristics in the United States 2007-2011, 5-year Estimates. Census Tract 13, Bernalillo County, New Mexico. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_DP02&prodType=table
[24] U.S. Census Bureau. DP03: Selected Economic Characteristics in the United States. 2006-2010. American Community Survey 5-year Estimates.
[25] S. Masek at the Albuquerque Police Department, personal communication, October 30, 2013.
[26] City of Albuquerque. Annual Information Statement. 2012. http://www.cabq.gov/dfa/documents/investor-documents/2012-annual-information-statement.pdf
[27] Bernalillo County: Bernalillo County. Comprehensive Annual Financial Reports from 2008 to 2011. http://www.bernco.gov/cafr/
[28] Sites Southwest Inc. 2007. Mountain View Sector Development Plan. Available at: http://www.svpartners.org/pdf/MVSDP%20REVISION%20W%20EDITS.pdf. Accessed October 25, 2013.
[29] Bureau of Vital Records and Health Statistics, New Mexico Department of Health. Query Results for Mortality Data by NM Small Areas, Years 1999 to 2011. Available at: http://ibis.health.state.nm.us/query/result/mort/MortSarea/AgeRate.htm. Accessed November 1, 2013.
[30] National Cancer Institute. Cancer Prevalence and Cost of Care Projections. http://costprojections.cancer.gov/annual.costs.html#f1. Accessed August 29, 2013.
[31] Ohsfeldt RL, Gandhi SK, Fox KM, Bullano MF, Davidson M. 2010. Medical and cost burden of atherosclerosis among patients treated in routine clinical practice. *J Med Econ*;13(3):500-7
[32] Swartz K. 2010. Projected Costs of Chronic Diseases. *Health Care Cost Monitor*. The Hastings Center. Available at: http://healthcarecostmonitor.thehastingscenter.org/kimberlyswartz/projected-costs-of-chronic-diseases/
[33] American Diabetes Association. 2013. Economic costs of diabetes in the U.S. in 2012. *Diab. Care*. 1-14.
[34] Braunschweig F, Cowie MR, Auricchio A. 2011. What are the costs of heart failure? *Europace* 13:ii13–ii17
[35] New Mexico Community Data Collaborative. Available at: http://nmcdc.maps.arcgis.com/home/index.html. Accessed November 1, 2013.
[36] URS Corporation. 2011. Sunport Boulevard Extension: Environmental Assessment. Prepared for: Bernalillo County Public Works. Available at: www.bernco.gov/upload/images/public_works/projects/SunportEASept2011.pdf. Accessed October 25, 2013.

[37] Mid Region Council of Governments. 2011. 2035 Metropolitan Transportation Plan. Available at: http://www.mrcog-nm.gov/images/stories/pdf/transportation/2035_mtp/Final_Approved/CompleteMTPLocalFedApproved_Dec_2012.pdf. Accessed October 25, 2013.
[38] Mid-Region Council of Governments. 2012. Transportation Improvement Program Policies and Procedures for the Albuquerque Metropolitan Planning Area: Main Document - 2012 Revisions. Available at: http://www.mrcog-nm.gov/images/stories/pdf/transportation/tip/TIP_Policies_Procedures_Main_Document_2012_Revisions.pdf. Accessed October 25, 2013.
[39] US Environmental Protection Agency. Environmental Assessments & Environmental Impact Statements. Available at: http://www.epa.gov/reg3esd1/nepa/eis.htm. Accessed November 15, 2013
[40] US Department of Transportation, Federal Highway Administration. NEPA Documentation. Available at: http://www.environment.fhwa.dot.gov/projdev/docuea.asp. Accessed November 15, 2013.
[41] Council on Environmental Quality, Executive Office of the President. December 2007. A Citizen's Guide to the NEPA: Having Your Voice Heard. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning_docs.Par.53208.File.dat/A_Citizens_Guide_to_NEPA.pdf. Accessed November 15, 2013.
[42] US Environmental Protection Agency. National Environmental Policy Act (NEPA). Available at: http://www.epa.gov/compliance/basics/nepa.html#process. Accessed December 2, 2013.
[43] Bernalillo County Public Works, (n.d.). Sunport Boulevard Extension Project. Available at: http://www.bernco.gov/sunport.
[44] Alves S, Tilghman J, Rosenbaum A, Payne-Sturges DC. 2012. U.S. EPA authority to use cumulative risk assessments in environmental decision-making. *Int. J. Environ. Res. Public Health* 9:1997-2019.
[45] US Environmental Protection Agency. 2013. Pollutants and sources. Available at: http://www.epa.gov/ttnatw01/pollsour.html.
[46] US Environmental Protection Agency. 2013. Data interactive map. Available at: http://www.epa.gov/airquality/airdata/ad_maps.html. Accessed October 25, 2013.
[47] US Environmental Protection Agency. 2013. National Ambient Air Quality Standards (NAAQS). Available at: http://www.epa.gov/air/criteria.html. Accessed October 25, 2013.
[48] US Environmental Protection Agency. 2013. Ozone. Available at: http://www.epa.gov/airquality/airtrends/ozone.html#ozloc. Accessed October 25, 2013.
[49] US Environmental Protection Agency. 2013. Airdata interactive map. Available at: http://www.epa.gov/airquality/airdata/ad_maps.html. Accessed October 25, 2013.
[50] US Environmental Protection Agency. 2013. Treatment of data influenced by exceptional events. Available at: http://www.epa.gov/fedrgstr/EPA-AIR/2007/March/Day-22/a5156.htm. Accessed October 25, 2013.
[51] US Environmental Protection Agency. 2013. Carbon monoxide information. Available at: http://www.epa.gov/oaqps001/greenbk/cindex.html. Accessed October 25, 2013.
[52] Rowangould GM. 2013. A census of the US near-roadway population: Public health and environmental justice considerations. *Transport Res D-TR E* 25:59-67.
[53] Mid-Region Council Of Governments. 2012. Traffic Flow Map 2012. Available at: http://www.mrcog-nm.gov/transportation/metro-planning/traffic-counts. Accessed October 25, 2013.
[54] Mid-Region Council of Governments. Summary Statistics Printout of Vehicle Classification Counts, 2009-2012.
[55] Mid-Region Council Of Governments. 2013. A Profile in Congestion. Available at: http://www.mrcog-nm.gov/images/stories/pdf/transportation/CMP/a-profile-in-congestion-2012.pdf. Accessed October 25, 2013.

[54] City of Albuquerque. 2001. Noise Ordinance. Available at: http://www.nonoise.org/quietnet/cqe/ordin.htm#12. Accessed October 25, 2013.
[57] Delfino RJ. 2002. Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research. *Environmental Health Perspectives* 110(S4): 573-589.
[58] Brunekreef B, Janssen NA, de Hartog J, Harssema H, Knape M, van Vliet P. 1997. Air pollution from truck traffic and lung function in children living near motorways. *Epidemiology* 1997(8):298-303.
[59] Kim JJ, Smorodinsky S, Lipsett M, Singer BC, Hodgson AT, Ostro B. 2004. Traffic-related air pollution and respiratory health: East Bay children's respiratory health study. *American Journal of Respiratory and Critical Care Medicine* 170:520-526.
[60] Lin S, Munsie JP, Hwang SA, Fitzgerald E, Cayo MR. 2002. Childhood asthma hospitalization and residential exposure to state route traffic. *Environmental Research* 88:73-81.
[61] Venn AJ, Lewis SA, Cooper M, Hubbard R, Britton J. 2001. Living near a main road and the risk of wheezing illness in children. *American Journal of Respiratory and Critical Care Medicine* 164:2177-2180.
[62] English P, Neutra R, Scalf R, Sullivan M, Waller L, Zhu L. 1999. Examining associations between childhood asthma and traffic flow using a Geographic Information System. *Environmental Health Perspectives* 107(9):761-767.
[63] Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, Peters J, McConnell R. 2005. Childhood asthma and exposure to traffic and nitrogen dioxide. *Epidemiology* 16(6): 737-743.
[64] Jerrett M, Shankardass K, Berhane K, Gauderman WJ, Künzli N, Avol E, Gilliland F, Lurmann F, Molitor JN, Molitor JT, Thomas DC, Peters J, McConnell R. 2008. Traffic-related air pollution and asthma onset in children: a prospective cohort study with individual exposure measurement. *Environmental Health Perspectives* 116(10):1433-1438.
[65] Kim JJ, Huen K, Adams S, Smorodinsky S, Hoats A, Malig B, Lipsett M, Ostro B. 2008. Residential traffic and children's respiratory health. *Environmental Health Perspectives* 116(9):1274-1279.
[66] McConnell R, Berhane K, Yao L, Jerrett M, Lurmann F, Gilliland F, Kunzli N, Gauderman J, Avol E, Thomas D, Peter J. 2006. Traffic, susceptibility, and childhood asthma. *Environmental Health Perspectives* 114:766-772.
[67] McConnell R, Islam T, Shankarass K, Jerrett M, Lurmann F, Gilliland F, Gauderman J, Avol E, Kuenzli N, Yao L, Peters J, Berhane K. 2010. Childhood incident asthma and traffic-related air pollution at home and school. *Environmental Health Perspectives* 118(7):1021-1026.
[68] Hoffmann B, Moebus S, Mohlenkamp S, Stang A, Lehmann N, Dragano N, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jockel KH, Heinz Nixdorf Recall Study Investigative Group. 2007. Residential exposure to traffic is associated with coronary atherosclerosis. *Circulation* 116:489-496.
[69] Hoffmann B, Moebus S, Stang A, Beck EM, Dragano N, Mohlenkamp S, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jockel KH, Heinz Nixdorf Recall Study Investigative Group. 2006. Residence close to high traffic and prevalence of coronary heart disease. *European Heart Journal* 27:2696-2702.
[70] American Lung Association. 2013. Impacts on Your Health. Available at: http://www.lung.org/healthy-air/outdoor/protecting-your-health/impacts-on-your-health/. Accessed October 25, 2013.
[71] American Lung Association. Disparities in the Impact of Air Pollution. Available at: http://www.stateoftheair.org/2013/health-risks/health-risks-disparities.html. Accessed October 25, 2013.
[72] Berglund B, Lindvall T, Schwela DH. 1999. Guidelines for Community Noise. World Health Organization. Available at http://www.who.int/docstore/peh/noise/guildelines2.html. Accessed October 25, 2013.

[73] Griefahn B, Marks A, Robens S. 2006. Noise emitted from road, rail and air traffic and their effects on sleep. *Journal of Sound and Vibration* 295:129-140.
[74] WHO Regional Office for Europe. 2005. Quantifying burden of disease from environmental noise: Second technical meeting report. Bern, Switzerland.
[75] Passchier-Vermeer W, Passchier WF. 2000. Noise exposure and public health. *Environmental Health Perspectives* 108 Suppl 1:123-131.
[76] Miedema HME, Oudshoorn CGM. 2001. Annoyance from transportation noise: relationships with exposure metrics DNL and DENL and their confidence intervals. *Environmental Health Perspectives* 109(4):409–416.
[77] London Health Commission. 2003. Noise and Health: Making the Link. Available at http://www.london.gov.uk/lhc/docs/publications/hia/evidencesummary/noise_links.pdf. Accessed October 25, 2013.
[78] Stansfeld SA, Berglund B, Clark C, Lopez-Barrio I, Fischer P, Ohrstrom E, Maines MM, Head J, Hygge S, van Kamp I, Berry BF. 2005. Aircraft and road traffic noise and children's cognition and health: a cross-national study. *Lancet* 365:1942-9.
[79] Van Kempen EM, Kruize H, Boshuizen HC, Amelin CB, Staatsen B, de Hollander A. 2002. The association between noise exposure and blood pressure and ischemic heart disease: A meta-analysis. *Environmental Health Perspectives* 110:307-317.
[80] Barregard L, Bonde E, Ohrstrom E. 2009. Risk of hypertension from exposure to road traffic noise in a population-based sample. *Occup Environ Med* 66(6):410-5.
[81] Selander J, Nilsson MT, Gluhm G, Rosenlund M, Lindqvist M, Nise G, Perhagen G. 2009. Long-term exposure to road traffic noise and myocardial infarction. *Epidemiology* 20(2):1-8.
[82] Babisch W, Buele B, Schust M, Kersten N, Ising H. 2005. Traffic noise and risk of myocardial infarction. *Epidemiology* 16:33-40.
[83] Babisch W. 2006. Transportation noise and cardiovascular risk: Updated Review and synthesis of epidemiological studies indicate that the evidence has increased. *Noise and Health* 8:1-29.
[84] Babisch W. 2008. Road traffic noise and cardiovascular risk. *Noise Health* 10:27-33.
[85] Mid-Region Council of Governments. 2011. Congestion Management Process Atlas. Available at: http://www.mrcog-nm.gov/transportation/metro-planning/congestion-management-process/31-transportation/technical-services. Accessed October 25, 2013.
[86] Mid-Region Council of Governments. 2013. East San Jose Pedestrian Composite Index Analysis.
[87] US Centers for Disease Control and Prevention. 2011. Physical Activity and Health. Available at: http://www.cdc.gov/physicalactivity/everyone/health/index.html. Accessed October 25, 2013.
[88] Frank L, Andresen M, Schmid T. 2004. Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine* 27(2), 87-96.
[89] World Health Organization and The World Bank. 2004. World report on road traffic injury prevention. Geneva: World Health Organization. Available at: http://whqlibdoc.who.int/publications/2004/9241562609.pdf. Accessed October 25, 2013.
[90] Roudsari B, Mock C, Kaufman R, Grossman DB Henary B, Crandall J. 2004. Pedestrian crashes: higher injury severity and mortality rate for light truck vehicles compared with passenger vehicles. *Inj Prev* June; 10(3):154–158.
[91] Kim JK, Ulfarsson GF, Shankar VN, Mannering FL. 2010. A note on modeling pedestrian-injury severity in motor-vehicle crashes with the mixed logit model. *Accid Anal Prev* 42:1751-8.
[92] World Health Organization and The World Bank. 2004. World report on road traffic injury prevention. Geneva: World Health Organization. Available at: http://whqlibdoc.who.int/publications/2004/9241562609.pdf. Accessed October 25, 2013.
[93] Ewing R, Kreutzer R. 2006. Understanding the relationship between public health and the built environment: A report prepared for the LEED-ND Core Committee. Available at: http://www.usgbc.org/Docs/Archive/General/Docs3901.pdf. Accessed October 25, 2013.

[94] Reynolds CCO, Harris MA, Teschke K, Cropton PA, Winters M. The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health* 2009;8:47.
[95] Echeverría S, Diez-Roux A, Shea S, Borrell LN, Jackson, S. 2008. Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: the multi-ethnic study of atherosclerosis. *Health & Place* 14(4):853-865.
[96] Kennedy BP, Kawachi I, Prothrow-Stith D, Lochner K, Gupta V. 1998. Social capital, income inequality, and firearm violent crime. *Soc Sci Med* 47(1):7-17.
[97] Echeverría S, Diez-Roux A, Shea S, Borrell LN, Jackson, S. 2008. Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: the multi-ethnic study of atherosclerosis. *Health & Place* 14(4):853-865.
[98] Poortinga W. 2006. Social relations or social capital? Individual and community health effects of bonding social capital. *Soc Sci Med* 63:255-270.
[99] Uphoff EP, Pickett KE, Cabieses B, Small N, Wright J. 2013. A systematic review of the relationships between social capital and socioeconomic inequalities in health: a contribution to understanding the psychosocial pathway of health inequalities. *Int J Equity Health* 12:54.

VIII. List of Appendices

Appendix A. Additional Key Planning Documents that Affect San Jose
Appendix B. Pathway Diagrams
Appendix C. Explanation of Terms Used in Resident Predictions
Appendix D. Overview of Sunport HIA process

Appendix A. Additional Key Planning Documents that Affect San Jose

Area plans: Two area plans, in particular, are of interest. Adopted in 1998 and updated in 2000, the *Southwest Area Plan* sought to guide future development by addressing general land use, transportation, drainage, and public services. The original plan dates back to when the airport was still known as Albuquerque International and before ground was broken on Mesa del Sol. The plan is of particular relevance to the HIA because the environmental assessment cites it as one explanation for the extension. The current version of the plan also mentions a vision for "a major light industrial corridor with office and commercial uses is planned generally east of Second Street, south of Woodward Road, and west of Interstate 25," modifying a vision expressed in the original 1988 plan.

Also of interest is the *Bernalillo County/International Sunport Station Area Sector Development Plan,* adopted in 2009. The plan lays out a vision for the future for select areas adjacent to the Rail Runner train stationon Second Street. This vision includes human scale development, a multiuse area with access to employment and entertainment, and a safe pedestrian and bicycling environment. The southernmost edge of the San Jose neighborhood as defined for the HIA is in the boundary area for the station, meaning it is within a quarter mile of the station, although it is not immediately adjacent to the station and is not a main neighborhood focused on in the plan.

Complete Streets resolution and plan: Adopted in 2011 by the Mid-Region Council of Governments, the *Complete Streets resolution* aims to "safely mov[e] people of all ages and abilities along and across the roadway: pedestrians, bicyclists, motorists, and transit users. Complete Streets make it safe to walk to school, a nearby cafe, a senior center, or cross the street to reach a bus stop. Complete streets are made safe to bicycle to work, a neighborhood park or connecting trail."[§§] The Complete Streets resolution applies to the San Jose neighborhood, which is in the MRCOG jurisdiction. Similarly, a recently drafted *South Yale Complete Streets Master Plan* includes areas on Yale Boulevard that are north of Gibson Boulevard on the east side of I-25. It is mentioned here as a plan of interest; although just outside of the project area for this HIA, it provides a glimpse of recent efforts in a nearby neighborhood to improve conditions for all who use the roads.

Comprehensive plan: The comprehensive plan is the main planning document for the City of Albuquerque and unincorporated parts of Bernalillo County. Planning documents are ranked and the comprehensive plan is the top rank, meaning all lower ranking documents must be in accordance with the vision and guidance described in this plan.

Design overlay zone: The HIA project area is not in a design overlay zone; however, the space for the proposed extension is in the *Sunport Boulevard Design Overlay Zone*. The Design Overlay Zone controls signage.

Sector plans: The project area closely aligns with the neighborhood focused on in the *South Broadway Neighborhoods Sector Development Plan*, dating to 1986, and is part of an area today known as the South Broadway Redevelopment Zone. The plan declared the area blighted and set out to promote economic development and redevelopment. It also noted environmental concerns at the time about developing industrial zoned land in the neighborhood for heavy industry. Near the proposed extension, the neighborhood north of Gibson Boulevard SE,

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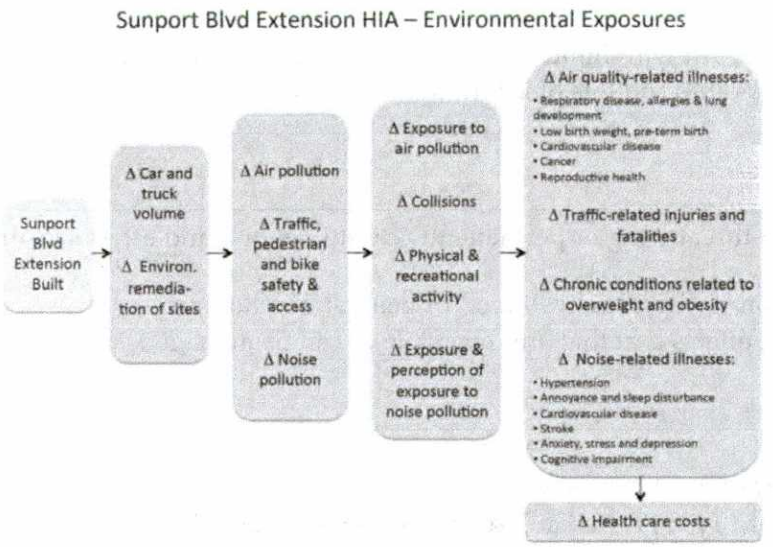
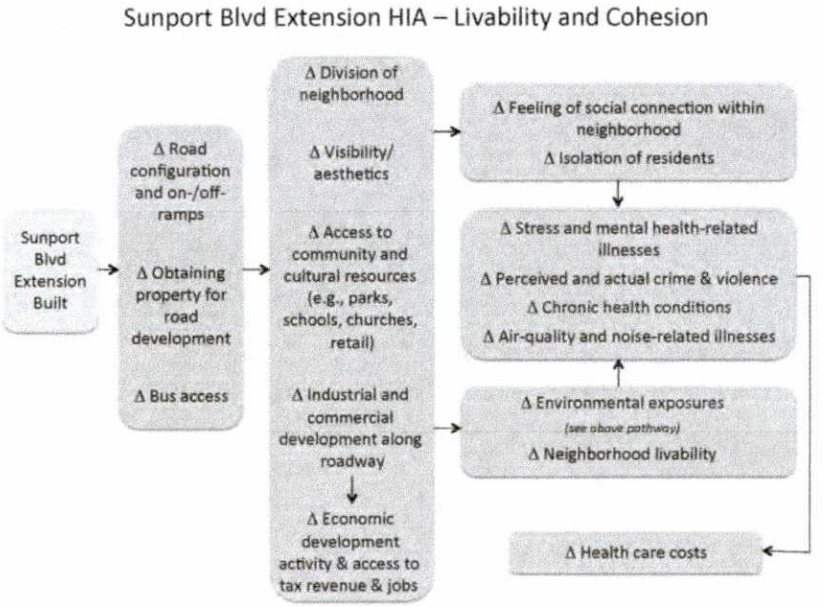
[§§] Mid-Region Council of Governments. 2012. Bernalillo County Pedestrian and Bicyclist Safety Action Plan. Available at: www.bernco.gov/upload/images/public_works/pedestrian%20safety%20action%20plan%20(BCC%20final).pdf. Accessed October 25, 2013.

although not included in the HIA project area but near it, is in the *South Yale Sector Development Plan*, adopted in 2009.

Appendix B. Pathway Diagrams

The diagrams below illustrate the issues brainstormed for this project. Ultimately, residents prioritized the following topics for analysis: exposure to environmental hazards; safety from injuries/collisions; and social connectedness, with additional interest in economic development.





Appendix C. Explanation of Terms Used in Resident Analysis

Likelihood

- Certain = information says the extension definitely will cause changes or stay the same (causal)
- Likely = logically possible and has a lot of supporting information, though some uncertainty
- Possible = logically possible but with limited or uncertain supporting information
- Unlikely = logically not possible and lots of information against it

Severity

- Severely = potentially life-threatening or permanently disabling, or could affect sensitive groups like children
- Moderately = big effects on well-being, livelihood or general functioning
- Not severely = short-term effects that that are reversible or can be managed

Number of People

- Everyone in San Jose = around 4,000 people
- Most in San Jose = 7 out of 10 people in San Jose, or around 3,000 people
- Some in San Jose = half of people in SJ, around 2,000 people
- Few in San Jose = less than 1 in 10 people in SJ – 400 people or fewer

Appendix D. Overview of Sunport HIA Process

Following is a summary of the key steps of the Health Impact Assessment process as they apply to the Sunport Boulevard Extension Project HIA.

Screening: Deciding Whether To Do an HIA

Before the start of the HIA, from approximately September 2011 to January 2013, residents followed the environmental assessment process for the Sunport Boulevard Extension. In September 2011, Bernalillo County released an Environmental Assessment report about the proposed extension, finding that it was expected to have no significant impacts to the environment and health. Approximately six months later, in March 2012, San Jose neighborhood resident Esther Abeyta sent a letter on behalf of the San Jose Neighborhood Association to the Federal Highway Administration. The letter challenged the adequacy of the County Environmental Assessment, in particular around the assessment of environmental justice issues.

Screening for the HIA was primarily from February to April 2013. People and organizations involved in screening included: a resident of the San Jose neighborhood, members of Bernalillo County PLACE MATTERS, SouthWest Organizing Project, the New Mexico Health Equity Partnership–Santa Fe Community Foundation, and Human Impact Partners. In February 2013, Esther Abeyta began conversations with the New Mexico Health Equity Partnership–Santa Fe Community Foundation and Human Impact Partners about the potential value of a Health Impact Assessment on the extension and whether there was an upcoming decision that could benefit from the additional information an HIA could provide. The group started conversations with SouthWest Organizing Project and Bernalillo County PLACE MATTERS. Together, it was decided to move forward with the HIA after two additional letters were received. One was a reply from the Federal Highway Administration to Esther Abeyta in March 2013 saying the issue was being investigated and that the office in Washington, DC alerted both their New Mexico Division office and the New Mexico Department of Transportation about the matter. The other was a letter in April 2013 from the Federal Highway Administration's New Mexico Division to the New Mexico Department of Transportation that suggested changes to the Environmental Assessment report. From the HIA perspective this suggested a possible decision to inform. After this point, the group reached out to the New Mexico Department of Health while forming a project Steering Committee.

Scoping: Determining the HIA Research Focus

This HIA used a "rapid" approach to maximize community participation in a short timeframe. The approach included assembling a panel of 10 residents who were identified and invited by the Steering Committee as neighborhood residents potentially affected by the project. Panelists offered a sample of perspectives from residents in the neighborhood.

The panel convened two times, first on August 17, 2013 for five hours to learn about HIA, discuss the proposed Sunport Boulevard Extension project, and identify key questions on which the HIA would focus (also known in the HIA process as "Scoping"). The panel also refined diagrams hypothesizing the connections between the proposal and potential health outcomes that were drafted by Human Impact Partners and Steering Committee.

Key topics of focus for the HIA that came out of this first meeting included: exposure to environmental hazards, safety from injuries and collisions, and social connectedness.

The panel included both English- and Spanish-speaking residents and so the meeting included simultaneous English and Spanish interpretation and materials available in both languages. For

this meeting, the Steering Committee designed and helped facilitate a process in which the resident panel could learn, engage, and deliberate.

Assessment and Recommendations: Gathering Information, Making Predictions, and Identifying Strategies for Improvement

After the first meeting, the Steering Committee recruited subject matter experts and a researcher in the key topics of focus for the HIA. The experts included one health economist and assistant professor in family and community medicine from the University of New Mexico, and one retired air quality expert who previously worked also with the university, the Environmental Protection Agency, and the Albuquerque-Bernalillo County Air Quality Control Board. A HIP staff member with background in pedestrian and bicycle planning also spoke about research related to safety.

During a second meeting of the resident panel approximately one month later, on September 14, 2013, and that lasted for approximately eight hours, the subject matter experts and researcher spoke to these topics, and the resident panel reviewed existing conditions data collected by Human Impact Partners during the one month period. Using both sources of information, as well as reflecting on experience, the panel came to consensus on the likely impacts of the development on health, and identified a set of recommendations that could mitigate potentially negative health impacts.

As with the previous meeting, this second meeting was conducted simultaneously in English and Spanish, and the Steering Committee designed and helped facilitate a process in which the resident panel could learn, engage, deliberate, as well as come to consensus and provide data for residents to consider in their decisions.

Reporting: Synthesizing Findings

Human Impact Partners drafted this report based largely on the original environmental assessment and coordinated gathering feedback from experts from whom the Steering Committee invited review and comment. Those reached out to included subject matter experts from the in-person Scoping meeting, former staff of the County public health department, staff at the state public health department, and a representative of a neighboring community. San Jose neighborhood resident and Steering Committee member Esther Abeyta facilitated gathering feedback from the resident panel on the draft report. After the release of the revised Environmental Assessment report, and given a relatively short time period for review and public comment on it, an addendum was drafted to highlight lingering issues raised in this initial draft that seemed unresolved in the revised EA. This document will be submitted as public comment to the revised Environmental Assessment report.

Participation in Steps of HIA

The table below illustrates the capacity in which key stakeholders participated in the Health Impact Assessment process.

Step of HIA Process	**Resident Panel**	**Subject Matter Experts or Researchers**	**Steering Committee**	**Human Impact Partners**
Screening			L	L
Scoping				
Pathway development	P		P	L
Finalizing of issues to focus on in the HIA	L		P	P
Assessment				
Gathering existing conditions information				L
Review of existing conditions information	P		P	L
Conversation about key research	P	L		P
Literature review				L
Identification of likely impacts	L		P	P
Consensus on likely impacts	L		P	P
Recommendations				
Identification of recommendations	L		P	P
Consensus on recommendations	L		P	P
Identification of supplementary recommendations			L	P
Reporting				
Writing and finalizing				L
Review	P	P	P	
Monitoring / Evaluation *(to be done)*				

L = lead, P = participant

Health Impact Assessment on NMRT's Request for a Special Use Permit Prepared for the Bernalillo County Planning Commission April 6, 2011 Hearing

Prepared by the Bernalillo County
Place Matters Team

3/22/2011

Report Written and Researched by:
Kitty Richards, MS, MPH, Lead, Bernalillo County Place Matters Team

Kristine Suozzi, PhD, Member, Bernalillo County Place Matters Team and Executive Director of the New Mexico Health Equity Working Group

The Following Community Members Provided Invaluable Input to the Report:
Esther Abeyta
Magdalena Avila
Julio Dominguez
Bianca Encinias
Nora Garcia
Marla Painter
Margarita Perez Pulido
Marlene Quintana
Rachel Riboni
Lauro Silva
Julie Stephens
Angela West

Technical Data and Support:
Will Athas, PhD, Epidemiologist
Caeri Thomas, Transportation Planner, Mid-Region Council of Governments

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Executive Summary

NMRT, LLC has requested a special use permit from Bernalillo County to locate a new dirty materials recovery facility (dirty MRF) in the community of Mountain View; the first of its kind within the Albuquerque Metropolitan area. A dirty MRF accepts waste from different sources, such as households and businesses, and sorts through waste by hand and machine to collect recyclables, which are then sold in the market place. NMRT, LLC needs a special use permit because the current zoning of M-2 does not allow for dirty MRF's. In order to obtain approval for a special use permit, Resolution 116-86 of the Bernalillo County Zoning Ordinance requires the applicant to demonstrate that the facility will not adversely impact the community's health, safety, and welfare. Community residents, the San Jose Neighborhood Association, and the Mountain View Neighborhood Association are concerned about the impacts of the proposed facility on the health, safety and welfare of area residents.

Mountain View and San Jose are vulnerable communities, with statistically significant higher death rates for ten of eleven leading causes of death and shorter life spans when compared to other communities in Bernalillo County (Athas, 2011). Residents in these communities are predominantly low-income and Hispanic (US Census Bureau, 2011). Mountain View and San Jose are contaminated by volatile organic compounds, metals, and nitrates and continue to host heavy industrial activity (Bernalillo County Office of Environmental Health, 2003).

In spite of past environmental degradation and continued attempts to bring in more heavy industry; for the past twenty-five years residents have worked tirelessly to prevent further environmental degradation, to preserve their traditions and cultural history, to increase access to open spaces, and to bring in cleaner industry and commercial business for a more vibrant and healthier community. Instead of bringing in an industry such as NMRT, residents favor the recent efforts to bring in cleaner industry, such as the Noribachi and US Foods facilities, ongoing negotiations to transition the old Price's Dairy to an urban open space refuge, and the recently passed Sunport Station Area Sector Development Plan (community meeting, February 8, 2011).

In addition to concerns about exposure to environmental hazards from the proposed facility, residents and members of the San Jose and Mountain View neighborhood associations are concerned that the proposed facility, less than 1 mile from the East San Jose Elementary School, ½ mile from the nearest residence, and .8 miles to San Jose's community center, will represent blight on their neighborhoods' future and quality of life, increased disease, and increased childhood asthma (community meeting, January 25, 2011). Residents also feel that NMRT is not providing them with accurate information on the full scope of their intended operations after learning that NMRT will be shipping in waste from cities as far away as Santa Rosa, Gallup, and Truth or Consequences.

Due to the inefficiencies of collecting recyclables from a multiple waste stream and costs associated with heavy truck transport, residents believe that in order for NMRT to maintain a reasonable profit, a huge quantity of waste will need to come in from communities located far from the County via more cost effective rail car transport (community meeting, March 14, 2011). This scenario is made more likely since NMRT was not awarded the City's single stream recycling center contract. Although this scenario is not a consideration in this report, if waste were to be shipped in by rail, a new set of health issues would require assessment.

In an effort to examine the impact of the proposed facility on their communities' health and well-being, Mountain View and San Jose residents approached the Bernalillo County Place Matters Team for assistance with conducting this Health Impact Assessment (HIA).

HIA is a combination of procedures, methods and tools that systematically judge the potential and sometimes unintended effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population. HIA also identifies appropriate actions to manage those effects. A HIA consists of five tasks: 1) screening to determine the need and value of a HIA, 2) scoping to identify the health impacts to evaluate, 3) assessment to provide for a profile of existing health conditions and an evaluation of the potential health impacts, 4) reporting to develop the report and communicate recommendations and findings, and 5) monitoring to track impacts on the decision making process and health.

The goals for this HIA are to address the impacts of the proposed facility on neighborhood livability, employment and economic development, traffic congestion (and impacts to injuries and fatalities), air quality, noise, odors, and vectors within the context of health. The HIA is based on information provided by the applicant and community members, and a review of government documents and peer-reviewed literature. Unfortunately, there were limitations to information provided by the applicant, including: 1) inconsistencies in traffic projections, 2) an absence of data on types, numbers and age of fleet vehicles, and 3) incomplete information on the type of waste transport, waste volume, waste origin, and waste characterization.

Conclusions

Conclusions of this HIA suggest that for a relatively modest recycling achievement (20,100 pounds out of a total of 2.462 million pounds of waste accepted a day), the communities of Mountain View and San Jose will be burdened not only by waste imported from communities as far away as Santa Rosa, Gallup, and Truth or Consequences (Bernalillo County Board of County Commissioners Hearing, Court Reporter Transcript, page 53, December 14, 2010), but by neighborhood blight, lack of quality jobs, economic development that is counter to the recent trend in clean industry and commercial development, increased traffic congestion on already severely congested roads, traffic related injuries and fatalities, diesel emissions, noise, odor, and vectors. Taken together, these burdens will likely contribute to the already statistically

significant high death rates and shorter life spans for Mountain View and San Jose residents and the potential for further environmental degradation, costly environmental remediation, and a decrease in the County's landfill space with waste imported from outside of the County boundaries.

The HIA findings are presented below:

- Cumulative health risks associated with traffic congestion, diesel emissions, noise, and odor from the proposed facility in addition to environmental hazards associated with other existing industries (Health Impact Assessment, page 9).
- The predominantly Hispanic communities of Mountain View and San Jose not only suffer from higher death rates and shorter life spans, but from higher poverty, a greater number of heavy industries (Bernalillo County, Office of Environmental Health, 2006), and more severe contamination when compared to other areas in the County (US Environmental Protection Agency, 2011) (Health Impact Assessment, page 1).
- For a relatively modest recycling achievement (20,100 pounds out of 2.462 million pounds of waste daily), the communities of Mountain View and San Jose will be burdened not only by waste imported from communities as far away as Santa Rosa, Gallup, and Truth or Consequences, but by decreased neighborhood quality, further poverty concentration, unavailability of quality jobs, and higher stress levels. Higher stress levels will contribute to increased susceptibility to cumulative environmental exposures resulting in shorter life spans and increases in already high death rates (Health Impact Assessment, page 9).
- The proposed facility is a significant departure away from the recent trend to attract clean industry and commercial development and, in exchange for modest job growth, will contribute not only to the existing environmental burden and potential costly clean-up, but to neighborhood blight, a stifled demand for commercial development by potential investors, and the potential for increased disease and disability among community residents and workers (Health Impact Assessment, page 10).
- Although the company would bring 90 – 120 jobs, these jobs would not necessarily go to residents living in San Jose and Mountain View and these jobs would be highly hazardous (Health Impact Assessment, page 10).
- It is likely that a corresponding increase in crash injuries and fatalities will occur with the introduction of 826 (for average waste volumes) to 2,684 (for peak waste volumes) heavy trucks travelling to and from the facility on Broadway, Blvd. on a given day (Health Impact Assessment, page 13).
- In addition to contributing to traffic congestion, already high crash rates, and further delays for 2nd Street at Rio Bravo, additional truck traffic along Rio Bravo would also impede residents' ability to evacuate their homes, many of which are located off of 2nd

Street, south of Rio Bravo, in the event of an emergency (Health Impact Assessment, page 13).

- Increased diesel emission exposures from the heavy truck traffic associated with the proposed facility in addition to existing industrial air emissions will increase the already high burden of chronic disease deaths for the San Jose and Mountain View population and contribute to the asthma burden of children, particularly since the proposed transport route goes right in front of the East San Jose Elementary School (Health Impact Assessment, page 16).
- Given the close proximity of the proposed facility's transport route to the East San Jose Elementary School, the cumulative impacts from the noise of airplanes already using the east-west runway of the Sunport and the noise associated with increased heavy truck traffic could significantly impact not only the quality of life of residents, but the immune, cardiovascular and neurological systems of children at the school (Health Impact Assessment, page 17).
- The proposed facility will contribute to the already strong odors associated with the sewage treatment plant and residents' reports of poor quality of life and well-being, high stress levels, and headaches (Health Impact Assessment, page 18).
- The proposed facility will increase the numbers of rodents, insects, birds, and microbes, particularly if waste is stored on-site over night or shipped via rail car, which in turn could contribute to an increase in infectious diseases in the Mountain View and San Jose communities as well as impacting US Foods' food distribution center and Ben E Keith (Health Impact Assessment, page 18).

The HIA provides the reader with an assessment of the potential health impacts that could occur as a result of permitting the proposed facility. It is our hope that policy makers consider these impacts as part of their decision making process.

Recommendation

Based on our review and the findings mentioned above, we recommend denying the special use permit request.

Table of Contents

Introduction

The Proposed Facility

NMRT, LLC is proposing to locate a transfer station and material recovery facility on a 26 acre property located on the east side of Broadway, Blvd., north of Rio Bravo and south of Woodward Boulevards, in the community of Mountain View. The proposed facility will accept materials from a variety of waste streams, including household, commercial, electronic, and construction. Solid waste professionals refer to these facilities as dirty material recovery facilities or dirty MRFs. Since the authors believe this term more accurately describes the proposed facility, dirty MRF will be used throughout this report to refer to the proposed facility type. Dirty MRFs are being phased out because of high operational costs (Waste Management meeting with Mountain View and San Jose community members, page 2 of minutes, January 18, 2011) and inefficiencies with recovery of recyclables from mixed waste streams, typically ten to fifteen percent of the comingled recyclable waste ("mbt.landfill-site.com"). Enrico Gradi, the Bernalillo County planner who reviewed the special use permit application, stated that "the facility appears to be an indoor salvage yard" (Staff Report to County Planning Commission, Background Section, page 3, November 3, 2010).

Residents of Mountain View and San Jose are predominantly low-income and Hispanic and live with a legacy of environmental contamination and a history of heavy industrial development (Bernalillo County, Office of Environmental Health, 2003). Residents are concerned that the proposed facility, less than 1 mile from the East San Jose Elementary School, ½ mile from the nearest residence, and .8 miles to San Jose's community center will blight their neighborhoods, and increase disease and upper respiratory problems (community meeting, January 25, 2011). Figure 1 spatially illustrates the distances between facilities housing vulnerable populations, either children or the elderly, and the proposed facility.

Other resident concerns range from whether the waste will be shipped to the facility in open or closed rail cars, the volume and origin of waste, the proximity of the facility to buildings that house vulnerable populations such as children and the elderly, access to roads in the event of an emergency evacuation, vectors, odor, litter, noise, waste-water discharge, impact to traffic congestion and traffic related injuries/fatalities, and impacts of diesel emissions on health (community meeting, January 25, 2011).

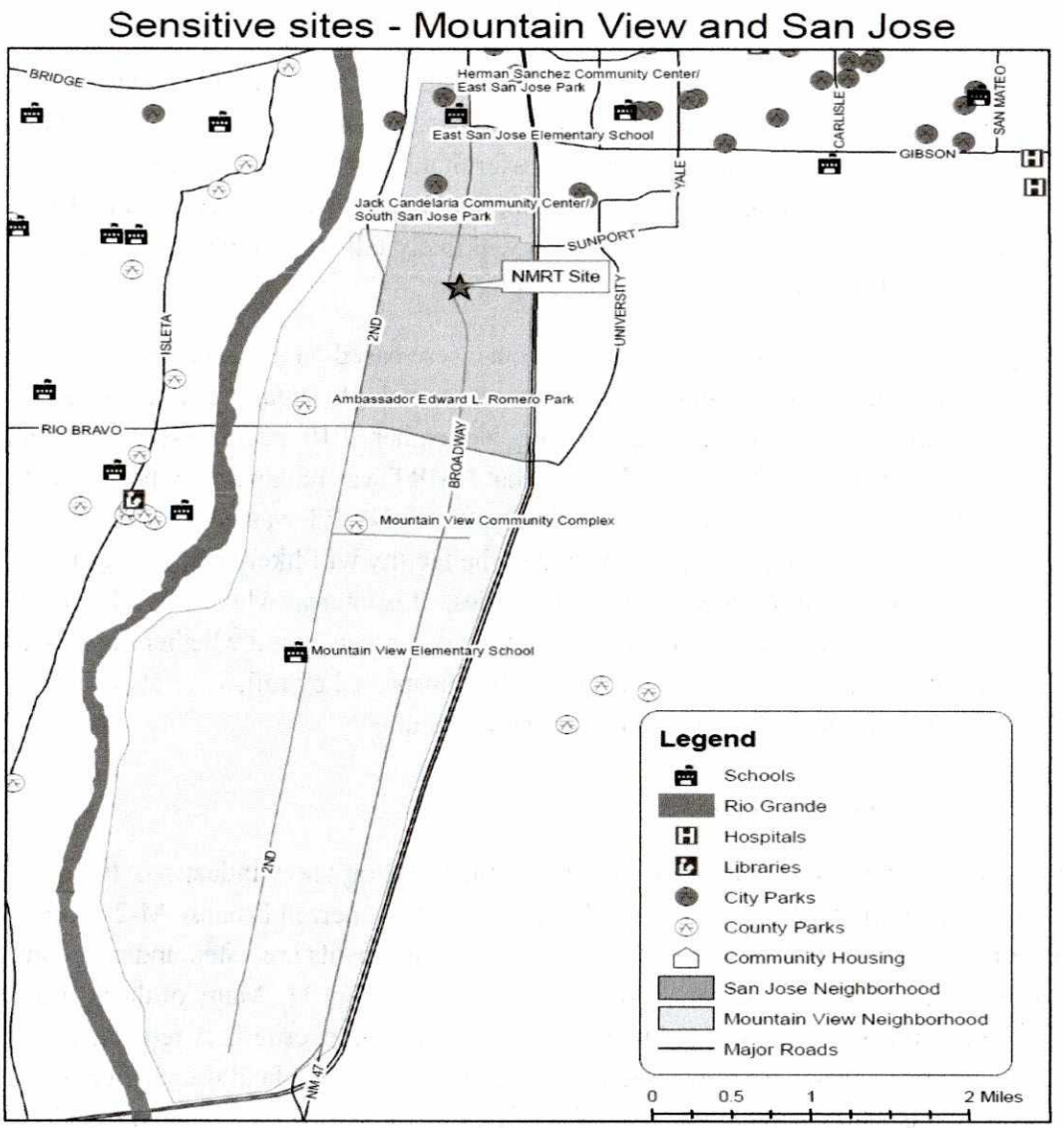


Figure 1. Distance from Facility to Sites Housing Vulnerable Populations (Source: Bernalillo County Office of Environmental Health)

Background

According to the NMRT application, up to a maximum of 8 million pounds (or 4,000 tons) of waste per day will be transported to the dirty MRF with an average volume of 2.462 million pounds (1,231 tons) of waste per day. Under normal conditions, an average of 914,000 pounds (or 457 tons) of waste will remain on site until sometime the next day (NMRT Recycling/Transfer Station Permit, Submitted to the New Mexico Environment Department, Appendix A, Section 3, page 11, 2010). Due to the time spent on-site and the waste's composition, which consists of food and other biological material, the waste will likely contribute to foul odors and insects, birds, and vectors.

Preliminary traffic impact analysis figures state that waste will be transported by an average of 826 vehicles per day and up to 2,684 vehicles per day based on the stated waste volume of up to 8 million pounds per day (NMRT Recycling/Transfer Station Permit, Submitted to the New Mexico Environment Department, Appendix A, Section 1, page 4, 2010). Assuming that waste is transported by vehicle, the majority of vehicles will likely fall into the very large heavy truck category of over 52,000 pounds gross vehicle weight.

According to the applicant, waste volume projections were based on an assumption that NMRT would be awarded the City of Albuquerque's contract for a single stream recycling center (Bernalillo County Planning Commission Hearing, November 2010, page TR-10). During the research phase of this report, the authors learned that NMRT was not awarded the contract (E. Abeyta, personal communication, February 3, 2011). Since NMRT was not awarded the contract, the majority of waste being transported to the facility will likely be coming from communities outside of Bernalillo County's boundaries. It is unclear where NMRT's waste will come from, how much and the types of waste that they will receive, and whether the waste will be transported in by rail or truck. If waste were to be transported by rail, a variety of health issues not addressed in this report would require assessment.

The Special Use Permitting Process

The property for the proposed facility is currently zoned M-2 or heavy industrial. In order to operate at this location, the applicant must obtain a special use permit because M-2 zoning prohibits dirty MRFs. The criteria for special use permit approvals are listed under Resolution 116-86 of Bernalillo County's Zoning Ordinance (see Attachment 1). Many of these criteria consider project impacts to public health and safety. For example, criteria A requires that applicants who seek special use permits demonstrate that a proposed land use change is consistent with the health, safety, and general welfare of residents of the County (Staff Report to the County Planning Commission, page 9, November 3, 2010).

In responding to criteria D of Resolution 116-86, stating that the applicant must provide a sound justification for a land-use change, the applicant suggests that the proposed facility should be granted a special use permit because it is consistent with the health, safety and welfare of residents for the following reasons: 1) the recycling center will receive waste generated by communities located in Bernalillo County, significantly reducing the pressure on existing landfills and the number of miles travelled to the Cerro Colorado Landfill, 2) there is no residential development or neighborhoods near the proposed facility, and 3) the facility will contribute to employment opportunities (NMRT, LLC. Justification, Sept. 24, 2010).

This report finds that statements 1 and 2 above are inaccurate for the following reasons:

- It is unlikely that the proposed facility will receive waste generated by communities within Bernalillo County because the applicant was not awarded the City of

Albuquerque's contract for a single waste stream recycling center; therefore waste will likely be imported from communities outside of Bernalillo County. Imported waste would not only create an environmental burden for Mountain View and San Jose residents, but would also decrease the space availability in the county's landfills.

- The facility will be located in the community of Mountain View and will impact the nearby community of San Jose.

Further, while the facility will contribute to modest job growth (90 – 120 jobs), the jobs described are extremely hazardous and dangerous (Bernalillo County Board of County Commissioners Hearing, Court Reporter Transcript, page 47, December 14, 2010) and will not necessarily go to residents of the affected community.

Report findings suggest serious negative health impacts from this proposed facility as described in the remainder of this report.

Guidelines and Standards

The goals of the Albuquerque-Bernalillo County Comprehensive Plan, the Southwest Area Plan, and the South Broadway Neighborhoods Sector Development Plan are to provide protection for public health and welfare while promoting a quality urban environment. While these plans are extremely important, given constraints on report length, the authors have selected to focus their analysis on the most pertinent material for policy makers, Resolution 116-86 of the Bernalillo County Zoning Ordinance which defines the criteria for evaluating special use permit applications.

Criteria A, C, E, and F of Resolution 116-86 are intended to provide protection for the community's health, safety, and welfare (see Attachment 1) and are applicable to NMRT's request for a special use permit. Specifically, approval for NMRT's special use permit request can only be granted if the applicant demonstrates that the proposed facility:

- Will not adversely affect "**the health, safety, and welfare of the community**" (criteria A).
- Adheres to the goal and policies of the Comprehensive Plan to, "create a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers variety and maximum choice in housing, transportation, work areas and lifestyles, while creating a **visually pleasant built environment**" (criteria C).
- That "changed community conditions justify a land-use change, or a change in land-use category, and that this land-use change is **more advantageous to the community**" (criteria E).
- That no change in land-use will be made that could result **in harm to the neighborhoods** (criteria F).

Health Impact Assessment

HIA is a combination of procedures, methods and tools that systematically judge the potential and sometimes unintended effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population. HIA also identifies appropriate actions to manage those effects. Tasks required for a successful HIA include: screening, scoping, assessing, reporting, and monitoring. HIAs have been successfully incorporated into policy decision making processes under a variety of circumstances, including development of business districts, consideration of various land-use plans for urban growth, naval weapons stations environmental remediation and land re-use plans, and "smart growth" development plans ("www.humanimpact.org").

This HIA assessed existing community and health conditions for San Jose and Mountain View and predicted the potential health impacts associated with the proposed facility. Based on input from community residents, the HIA focused on the following priorities:

- Neighborhood Livability
- Employment and Economic Development
- Traffic Congestion
- Air Quality
- Noise
- Odor
- Vectors

The HIA is based on information available from the applicant, community members, government documents, and peer reviewed literature which was compiled and reviewed throughout the report research time period and up to March 18, 2011. Information provided by NMRT describing traffic generation as a result of the facility, waste characterization, waste origin, waste volume by type, waste transportation routes, and type of waste transport was incomplete – a concern also shared by the New Mexico Environment Department's Solid Waste Bureau (see Attachment 2) (Letter from T. Nelson to J. Moffat, February 14, 2011).

Neighborhood Livability

The Association between Neighborhoods and Health

Research has found that the clustering of social, economic and environmental health risks in low-income and minority neighborhoods contributes to sickness and death (Joint Center for Political and Economic Studies, 2011). Minorities living in poor neighborhoods not only experience fewer opportunities for upward social and economic mobility as a consequence of limited access to quality schools and employment, but also experience a disproportionate burden of pollution when compared to whites (Morello-Frosch & Lopez, 2006). Minority children living in highly segregated neighborhoods have no access to "opportunity neighborhoods", this lack of access

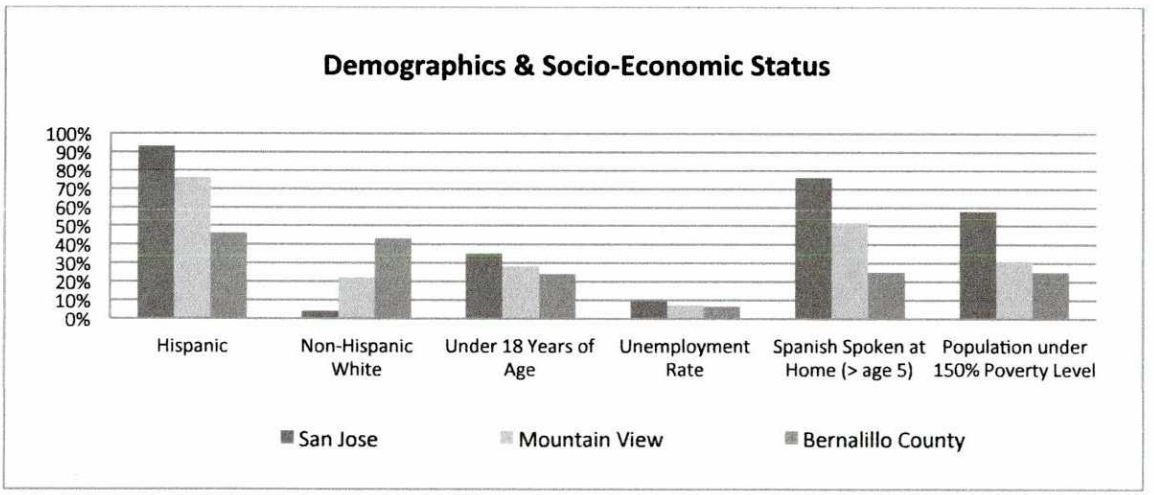
influences health status throughout the life span because of the early exposure to poor schools, unsafe environments, and lack of jobs (Acevedo-Garcia et al. 2008). High minority communities face a cumulative exposure rate to environmental hazardous sites that is nearly nine times greater than for low minority communities (Faber & Krieg, 2002).

Recently, courts have begun considering the cumulative impacts to a community from environmental hazards. Chaparral, a low-income, predominantly Hispanic community, faced a situation similar to that of Mountain View and San Jose, with three solid waste sites located near their community when a request for a fourth landfill permit was submitted. In spite of Chaparral residents' testimony on the impact of the landfill on their health, safety and welfare, the New Mexico Environment Department (NMED) issued Rhino Environmental Services, Inc. a solid waste permit. In 2005, the New Mexico Supreme Court issued a precedent setting decision in Colonias Development Council v. Rhino Environmental Services, Inc. ruling that the NMED failed to consider factors such as the socioeconomic status of the affected community, the cumulative environmental impacts to the community, and the social impacts of living in a community surrounded by solid waste sites (Fisher, 2009).

Current Demographics, Conditions of Neighborhood Livability, and Health in San Jose and Mountain View

Figure 2 shows the demographic and socio-economic status of neighborhood residents living in San Jose and Mountain View. San Jose and Mountain View are comprised of a majority of Hispanic residents, 93% and 76%, respectively, compared to Bernalillo County (46%). Fifty-eight percent of San Jose residents and 31% of Mountain View residents are living below 150% of the Federal Poverty Level, compared with 25% of Bernalillo County's residents. San Jose has a relatively young population, with 35% being under age 18, compared to Mountain View (28%) and Bernalillo County (24%).

Figure 2. Demographics and Socio-Economic Status (Source: US Census Bureau, 2009 Estimates)



The neighborhoods of Mountain View and San Jose are home to thirty-three sites regulated by the Environmental Protection Agency that are: 1) highly contaminated, 2) store, dispose of, transport, and generate hazardous waste, 3) discharge pollutants into the surface water, and 4) release large volumes of toxins into the air (Bernalillo County Office of Environmental Health, 2002). Two of these sites are abandoned hazardous waste sites (also known as Superfund sites) that have contaminated the shallow ground water supply with hazardous volatile organic compounds and creosote (US Environmental Protection Agency, 2011). Six independently operated companies, including General Electric, were found responsible for the South Valley Superfund site (US Environmental Protection Agency, 2011). Mountain View and San Jose are also the home of the state's largest nitrate contamination ground water plume (New Mexico Office of Natural Resources Trustees, 2011), Albuquerque's sewage plant, fifteen facilities that discharge pollutants into the ground water, and forty auto salvage yards (Bernalillo County Office of Environmental Health, 2011). In the words of Julio Dominguez, a former resident who grew up in Mountain View, "our community is at a pollution saturation point and we are actively witnessing the impacts on our health, our neighbor's health and our children's health" (community meeting, February 11, 2011).

The loss of income, historical policies that result in discrimination, and the impact of polluting facilities all contribute to high stress levels ((Clougherty & Kubzansky, 2009). According to Evans (2003), stress results from a physiological response in the body and is cumulative over time, with chronic stress creating more bodily damage than acute stress. Consequently, stress levels, along with environmental exposures, have been shown to contribute to cognitive problems such as depression, anxiety and memory deficits, shorter life spans, and higher rates of deaths for heart attacks and cancer.

The association between environmental burdens, stress, premature deaths, and deaths found in the literature is reflected in Mountain View and San Jose. Hispanics living in Mountain View and San Jose have significantly higher death rates for ten of eleven leading causes of death and shorter life spans when compared with Hispanics living in other communities in Bernalillo County as shown in figures 3 and 4 (Athas, 2011).

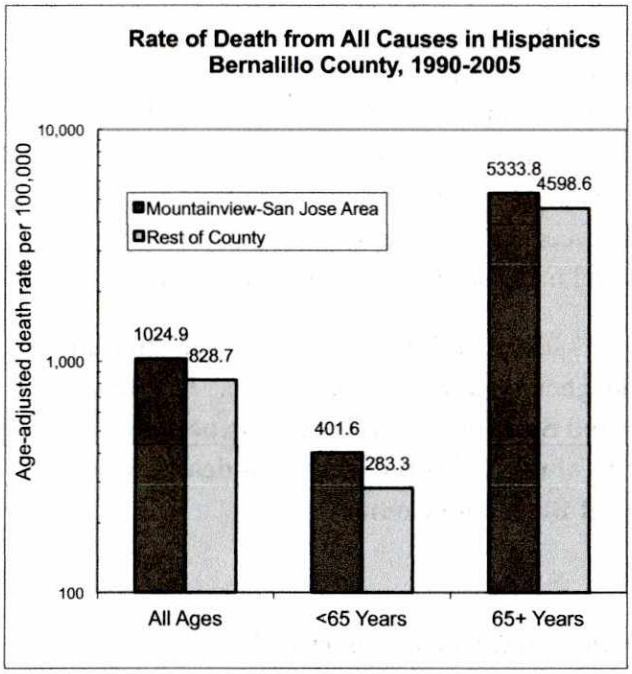


Figure 3. Premature Deaths and Deaths by All Ages – Hispanics (Source: New Mexico Department of Health, Vital Records Bureau)

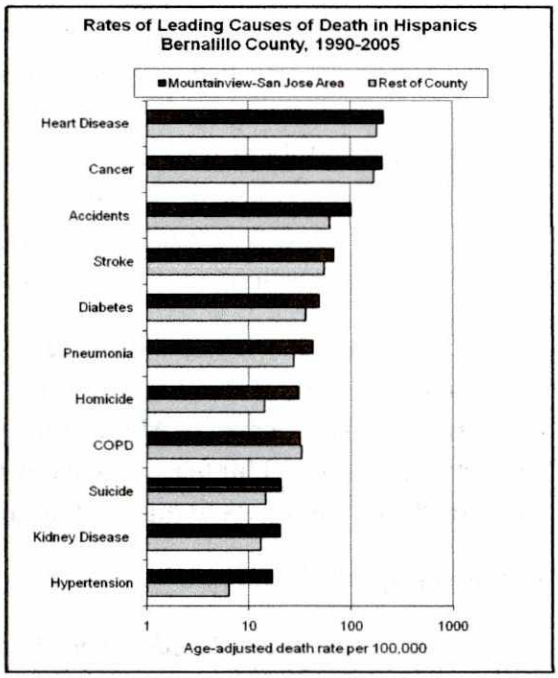


Figure 4. Leading Causes of Deaths in Hispanics (Source: New Mexico Department of Health, Vital Records Bureau)

Impacts of the Proposed Facility on Neighborhood Livability

The applicant promotes the facility as a recycling center that will contribute to sustainability (with facility features such as preferred parking for those carpooling, bike racks, lockers and showers for employees bicycling to work, and use of green building design) and community goals implementation for reduced landfill waste (NMRT, LLC presentation to the Bernalillo County Board of County Commissioners, December 14, 2010). However, documents reviewed indicate that the proposed facility will not contribute to sustainability or community goals for the following reasons:

- Documents submitted to the New Mexico Environment Department (NMRT Recycling/Transfer Station Permit, Submitted to the New Mexico Environment Department, Appendix A, Section 1, page 3, 2010), state that of the average 2.462 million pounds of waste accepted daily, only an estimated 5.4 percent will consist of comingled recyclable waste from which a maximum of ten to fifteen percent (or 20,100 pounds) can be recycled ("mbt.landfill-site.com"). **This leaves greater than 2.442 million pounds of waste for transport to the Cerro Colorado and Southwest landfills on average, and significantly more if using the maximum 8 million pounds of daily waste figure. This waste will likely come from communities located outside of the County since the applicant was not awarded the City of Albuquerque's contract for a single stream recycling center**.

- For a relatively modest recycling achievement (20,100 pounds out of 2.462 million pounds of waste daily), the communities of Mountain View and San Jose will be burdened not only by waste imported from communities as far away as Santa Rosa, Gallup, and Truth or Consequences, but by decreased neighborhood quality, further poverty concentration, unavailability of quality jobs, and higher stress levels. Higher stress levels will contribute to increased susceptibility to cumulative environmental exposures resulting in shorter life spans and increases in already high death rates.

Research suggests that stressors increase a person's susceptibility to environmental exposures which in turn impacts the biological system (Clougherty and Kubzansky, 2009). **This biological chain reaction is reflected in Mountain View and San Jose residents who experience shorter life spans and higher death rates for 10 of the 11 leading causes of death, when compared with residents living in other areas of Bernalillo County**.

Employment and Economic Development

The Association between Employment, Economic Development, and Health

Literature suggests that employers seek to locate in communities that offer their potential employees a good quality of life, quality education, opportunities for upward economic mobility, and physical amenities such as libraries, streets that are safe and enjoyable to walk, and parks (Salvesen & Renski, 2003) Land-use patterns that encourage neighborhood interaction and a sense of community have been shown not only to reduce crime, but also create a sense of community safety and security (Yen & Bhatia, 2002).

Current Employment and Economic Development Conditions in San Jose and Mountain View

Recently, commercial businesses and cleaner types of industry have located in San Jose and Mountain View. Two of these businesses are US Foods and Noribachi, which employ 125 and 300 employees, respectively. Residents are encouraged by this trend, the recently passed Sunport Station Area Sector Development Plan (Sunport Plan), negotiations to transition the Price's Dairy property to the Southwest's first urban open space refuge, and the remediation of two Superfund sites (community meeting, February 8, 2011).

According to the Mid-Region Council of Government's documentation on the Sunport Plan, the Mountain View neighborhood is an inviting place for commercial development that could be modeled after the North Valley/Journal Center, and because of vacant land availability, there are no costs associated with demolition ("mrcog-nm.gov"). Developer interest in Station area parcels has recently increased and includes preliminary plans for: 1) high end residential homes, 2) mixed commercial use, and 3) hotel, office and flex space uses. The Sunport Plan summary states concerns similar to those voiced by residents. Specifically, the unsightliness of heavy

industrial development, the contribution to environmental contamination, and the potential for decreased market demand for commercial property development ("mrcog-nm.gov").

Impacts of the Proposed Facility on Employment and Economic Development

The applicant states that the facility will provide much needed jobs for area residents, citing the recent loss of 400 jobs due to the closure of the General Electric facility (NMRT, LLC., Justification, Sept. 24, 2010, page 4). However, documents indicate they will initially employee only 90 individuals, with forty-four percent being employed as trash sorters or pickers. When operating at peak capacity, up to 120 individuals will be employed, with thirty-seven percent employed as trash sorters or pickers. (NMRT Recycling/Transfer Station Permit, Submitted to the New Mexico Environment Department, Appendix A, page 14, 2010).

As described by the applicant, sorters will pick through waste dumped on the transfer floor for initial sorting, with the later assistance by equipment operators. Mixed waste, commercial waste, and multi-family waste will be sorted by hand and mechanically (NMRT Recycling/Transfer Station Permit, Submitted to the New Mexico Environment Department, Appendix A, page 11, 2010). In addition to sorting a myriad of waste from households, businesses, construction sites, and apartments, employees will be exposed to diesel exhaust containing cancer-causing particles, carbon monoxide, and nitrogen oxides, along with noise and odors. According to testimony provided on behalf of NMRT, the recycling and waste hauling business is among the top five most dangerous in the country (Bernalillo County Board of County Commissioners Hearing, Court Reporter Transcript, page 47, December 14, 2010).

Although the applicant has promoted the facility as a contributor of needed jobs for nearby residents, residents have expressed concern about the quality of jobs being offered by the applicant. As resident Esther Abeyta stated, "Are these the types of jobs they think we want? Isn't that what they had the homeless doing up at Cerro Colorado? Surely, we have greater career aspirations for our families than this" (community meeting, February 8, 2011).

The proposed facility is a significant departure away from the recent trend to attract clean industry and commercial development and, in exchange for modest job growth, will contribute not only to the existing environmental burden and potential costly clean-up, but to neighborhood blight, a stifled demand for commercial development by potential investors, and the potential for increased disease and disability among community residents and workers.

Traffic Congestion

The Association between Traffic Congestion and Health

Truck and rail traffic impact safety for pedestrians, bicycles, and drivers. It is well documented that higher traffic volumes contribute to more traffic related pedestrian injuries (Levine, Kim, & Nitz, 1995; Jackson & Kochtitzky, 2001). Further, peer reviewed literature shows a statistically significant relationship between traffic volume and the number of crashes involving pedestrians, with pedestrian collisions more common in low-income areas, possibly due to poor investment in needed infrastructure (LaScala et al., 2000).

Current Traffic Congestion Conditions and Crash Rates in San Jose and Mountain View

Data obtained from the Mid-Region Council of Governments (MRCOG) suggests that the current road infrastructure is already severely overburdened due to existing traffic volumes (Mid-Region Council of Governments (MRCOG), 2011). With the addition of 826 to 2,684 vehicles, many of which will be heavy trucks over 52,000 pounds gross vehicle weight, this infrastructure will be at a tipping point.

According to 2008 data provided by MRCOG (2008 SE Data on 2008 Networks PM Peak Hour V/C), the following road segments/intersections are:

Over Capacity

- Rio Bravo, west of 2nd Street
- Rio Bravo/I-25 interchange
- I-25, southbound, between Sunport and Rio Bravo
- Broadway to Gibson, east of I-25

Severely Congested

- I-25, southbound, between Gibson and Sunport
- Gibson/I-25 interchange

Traffic conditions have undoubtedly become more congested since 2008.

The forecasted scenario for 2015 with a Partially Built-Up Network is much worst (MRCOG, 2011). The following road segments/intersections are:

Over Capacity

- Rio Bravo/I-25 interchange
- Gibson/I-25 interchange

Severely Congested

- Rio Bravo, west of 2nd Street
- I-25, south of the Rio Bravo/I-25 interchange
- I-25, from Gibson to Sunport

According to MRCOG's General Crash Data and Trends 2000 – 2008 (MRCOG, 2011), the following intersections within our community area show:

Crash Rates:

Up to two times the average crash rate

- Rio Bravo/2nd Street
- Rio Bravo/Broadway
- Rio Bravo/I-25 interchange
- Gibson/I-25 interchange

Fatal and Injury Crash Rates:

Up to two times the average crash rate

- Rio Bravo/2nd Street
- Rio Bravo/Broadway
- Broadway/Gibson

Heavy Truck Related Crash Rates:

Up to two times the average crash rate

- Rio Bravo/2nd Street
- Rio Bravo/Broadway
- Woodward/2nd Street

Up to three times the average crash rate

- Broadway/Woodward

Above three times the average crash rate

- Rio Bravo/I-25

Pedestrian Related Crash Rates:

Up to two times the average crash rate

- Broadway/Gibson

Impacts of the Proposed Facility on Traffic Congestion (Waste Transport to Cerro Colorado Landfill)

The authors of this report assume traffic to the Cerro Colorado Landfill will travel north from Broadway, Blvd. to the Gibson/I-25 interchange, until construction of the Sunport/I-25 interchange is completed based on a memo from J. Strozier dated Nov. 29, 2010. It is noteworthy that the Traffic Impact Assessment provided to Bernalillo County modeled traffic using the Sunport/I-25 interchange, which has not yet begun construction.

Regardless of whether the heavy trucks use the Gibson/I-25, Rio Bravo/I-25, or the proposed Sunport/I-25 interchanges, it is clear that heavy trucks will enter I-25 at significantly slower speeds than the 65 miles per hour speed used by traffic continuing north from the south. The slow merging speeds of heavy trucks combined with the high speeds of existing I-25 traffic could lead to increased traffic collisions and fatalities. Page 6 of the Traffic Impact Assessment shows a failing east bound weave/merge ramp during the morning peak hour (R. Meadows, personal communication, February 21, 2011).

Impacts of the Proposed Facility on Traffic Congestion (Waste Transport to Southwest Landfill)

There was no information provided on the proposed transport route to Southwest Landfill to dump construction waste. It is assumed that transport would move from Broadway to Rio Bravo, west across the Rio Grande, then onto the Southwest Landfill.

According to MRCOG, Rio Bravo, west of 2nd Street, was over capacity in 2008 and is predicted to be severely congested in 2015 (MRCOG, 2011). A Traffic Impact Assessment conducted for the US Foods facility showed unacceptable delays for 2nd Street at Rio Bravo, Blvd., south-bound lane (R. Meadows, personal communication, February 21, 2011). The Rio Bravo/2nd Street intersection is extremely dangerous and has greater than two times the crash rates involving injuries and fatalities when compared to Bernalillo County's average crash rates (MRCOG, 2011).

Impacts of the Proposed Facility on Traffic Congestion - Conclusion

It is likely that a corresponding increase in crash injuries and fatalities will occur with the introduction of 826 (for average waste volumes) to 2,684 (for peak waste volumes) heavy trucks travelling to and from the facility on Broadway, Blvd. on a given day. Despite a disproportionately large number of vehicle crashes involving fatalities and injuries occurring at intersections throughout the community area, the applicant did not provide any crash related information.

In addition to contributing to traffic congestion, already high crash rates, and further delays for 2nd Street at Rio Bravo, additional truck traffic along Rio Bravo would also impede residents' ability to evacuate their homes, many of which are located off of 2nd Street, south of Rio Bravo, in the event of an emergency.

Air Quality

The Association between Air Quality and Health

Garbage trucks are known to be some of the oldest (41% are more than a decade old), least fuel efficient, most polluting vehicles on our roadways. Because more than 80% are privately owned, they are not as closely monitored as other publicly owned vehicles, such as municipal buses. Ninety percent of all garbage trucks are powered by diesel ("www.informinc.org").

Although the Environmental Protection Agency has established diesel emission standards for heavy truck engines of .10 parts per million (ppm) in 2003, .8 ppm in 2007, and .2 ppm in 2010, engine manufacturers can use carbon credits for manufactured diesel engines in order to achieve these standards. Further, due to the aging diesel truck fleet, many of the diesel trucks on our highways do not comply with these standards (R. Hawkins, personal communication, February 17, 2011).

Diesel engines are one of the most toxic sources of emissions. In addition to carbon monoxide and nitrogen oxides, diesel exhaust is composed of fine particles that contain more than 40 cancer-causing substances, such as benzene, arsenic and formaldehyde. Diesel exhaust is emitted at the ground level, where we can breathe it, making it more harmful (Clean Air Task Force, 2005).

Illness and death related to diesel exhaust is high. Approximately 21,000 people die prematurely each year from exposure to particulate matter from diesel engines. Every year, over 400,000 asthma attacks and 27,000 heart attacks are attributed to fine particles from diesel vehicles. These illnesses lead to increased emergency room visits, hospitalizations and lost school and work days (Clean Air Task Force, 2005). Figure 5 shows the contribution of diesel emissions to cancer in metropolitan areas of the U.S. Diesel emitted from off-road vehicles such as heavy equipment and on-road vehicles such as heavy trucks contribute to a vast majority of the cancer risks (Morello-Frosch & Jesdale, 2006).

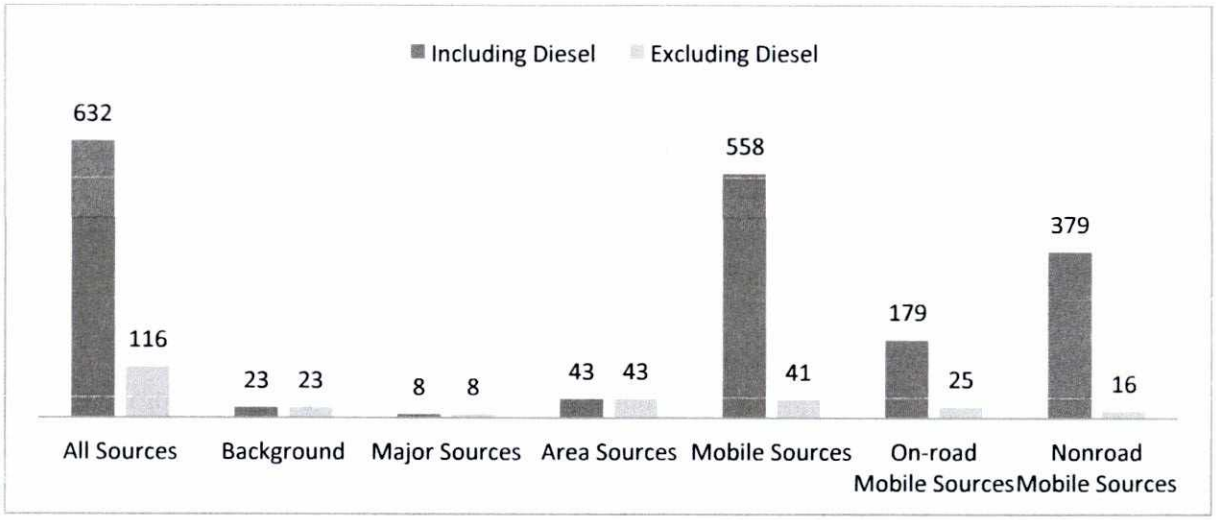


Figure 5. Distribution of Estimated Cancer Risks in US Metropolitan Areas, per Million

Children are more susceptible than adults to diesel emissions for several reasons. They are more active and breathe more rapidly, the ratio of their lung surface area to their body weight is greater so they inhale more air pound for pound, and they spend more time outdoors. Diesel exhaust exposure in children stunts lung growth, increases asthma and bronchitis, and results in more crib deaths. Diesel also affects the heart rhythms and control mechanisms in the elderly (Clean Air Task Force, 2005).

Current Air Quality Conditions and Health in San Jose and Mountain View

In February of 2011, zip code 87105 had a total of 84 facilities that emitted air pollutants into the air, with most of these facilities located in Mountain View. Air pollutants emitted consisted of carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter under 2.5 microns, particulate matter under 10 microns, hazardous air pollutants, and volatile organic compounds (K. Ziegler, personal communication, Feb. 23, 2011). Although not all 84 of these facilities were located in Mountain View, air pollutants do not stop at neighborhood boundaries. Therefore, emissions occurring in one area of 87105 will likely impact other areas of 87105.

Literature suggests that exposure to diesel emissions contributes not only to cancer, but to deaths from chronic diseases such as heart attacks and asthma. Although we cannot say that the statistically significant higher death rates from heart disease and cancer seen in Hispanics living in San Jose and Mountain View (Athas, 2011) are caused solely from diesel emissions (figure 6), increased diesel emission exposures will increase the already high burden of death for this population.

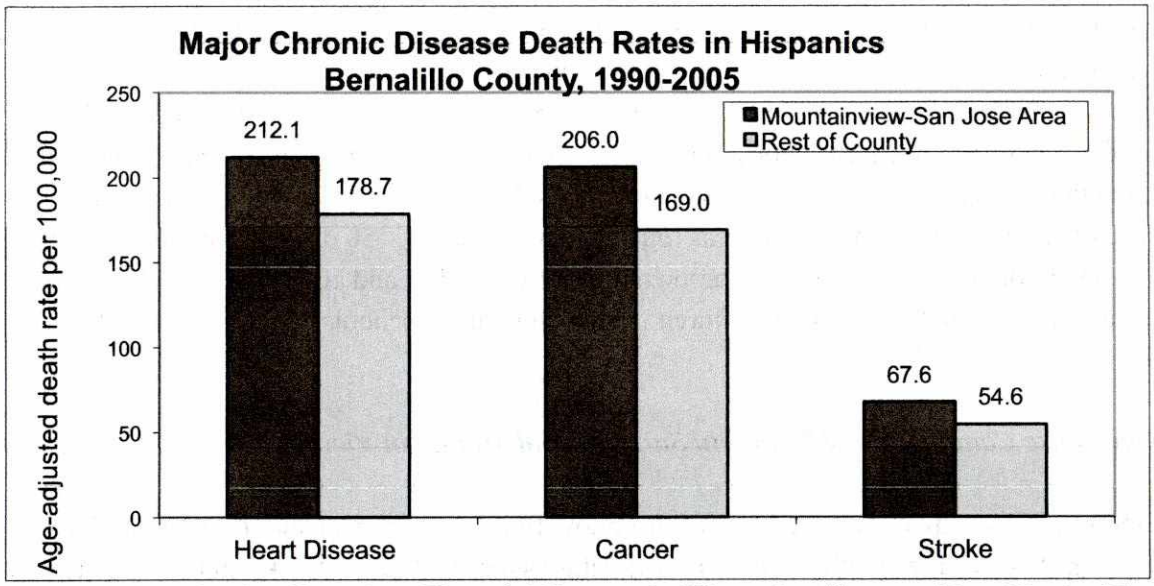


Figure 6. Deaths Attributed to Chronic Diseases in Hispanics (Source: New Mexico Tumor Registry)

Impacts of the Proposed Facility on Air Quality in San Jose and Mountain View

Given the inconsistency in traffic projections provided by NMRT, and the lack of data on the proposed truck fleet, such as age of fleet, year of engine manufacture, and weight of trucks, it is difficult to estimate the true impacts of diesel truck traffic on air quality and health. However, diesel emissions would increase due to the projected heavy truck traffic volumes, from 826 to 2,684 vehicles per day.

Increased diesel emission exposures from the heavy truck traffic associated with the proposed facility in addition to existing industrial air emissions will increase the already high burden of chronic disease deaths for the San Jose and Mountain View population and contribute to the asthma burden of children, particularly since the proposed transport route goes right in front of the East San Jose Elementary School.

Noise

The Association between Noise and Health

Traffic noise has been linked to many adverse health outcomes, including general quality of life (Dratvia et al., 2010), induced hearing loss, increases in blood pressure and cardiovascular diseases, and psychosocial disorders such as noise induced sleep disturbances (Evans et al., 2001; Ising et al., 2004). There is a dose response relationship for all of these; as persistent noise levels increase, adverse health outcomes also increase.

These adverse health outcomes are particularly pronounced in children who have less well-developed immune, cardiovascular and neurological systems. Therefore, children have an additional risk from excessive ambient noise exposure. Evans et al. (2001) examined children exposed to moderate road traffic noise (outside daytime level $L_m > 60$ dB (A)). Their night-time urine contained increased concentrations of free cortisol and cortisol metabolites when compared to those of children living in quieter areas (outside daytime level < 50 dB(A)). Studies have also found that children exposed to intense ambient noise from traffic and aircraft at school may have lower reading and math scores than children who attend quieter schools (US Environmental Protection Agency, 1978)

Current Noise Conditions and Health in San Jose and Mountain View

Residents in Mountain View already suffer from low flying commercial and military air planes using the east-west runway of the Sunport. Literature states that diesel trucks and garbage trucks range from 84 to 100 decibels, respectively. Exposure to 85 decibels for prolonged periods can result in gradual hearing loss, while exposure to 100 decibels for greater than one minute can result in permanent hearing loss. As mentioned previously, children exposed to intense ambient noise from traffic and aircraft may have lower reading and math scores.

Impacts of the Proposed Facility on Noise

Given the close proximity of the proposed facility's transport route to the East San Jose Elementary School, the cumulative impacts from the noise of airplanes already using the east-west runway of the Sunport and the noise associated with increased heavy truck traffic could significantly impact not only the quality of life of residents, but the immune, cardiovascular and neurological systems of children at the school.

<u>Other Environmental Impacts – Odors and Vectors</u>

The Association between Odors and Health

While odor perception is subjective and odor regulations have been difficult to enact and even more difficult to enforce, there is much documentation on the potential effects of odors on communities. The effects are related to the frequency, duration and concentration of the odor (Agency for Toxic Substances and Disease Registry, 2011). Ambient odors have been shown to result in social and behavioral problems as well as diminished sense of well-being, enjoyment of daily activities and the ability to perform various tasks. Health effects directly associated with odors are headaches, nausea, chronic fatigue syndrome (Natelson & Lange, 2002), and eye, mucous membrane and upper respiratory tract irritation (Baldwin et al., 1999; New Hampshire Department of Environmental Health, 2008; Schiffman & Williams, 2005). These potential effects can become compounded in vulnerable populations such as pregnant women, children,

the elderly, people with chronic diseases and the immune compromised.

Current Odor Conditions and Health in San Jose and Mountain View

The community of Mountain View has already been impacted by environmental odors. On numerous occasions, members of the community have filed complaints with the Bernalillo County Office of Environmental Health and the City of Albuquerque about odor from the sewage facility (G. Schroeder, personal communication, February 2011). In spite of many community meetings with sewage facility managers and their promise to control the odors through the latest technology, the technology has failed and the odors have not abated. Community residents complain of headaches, eye irritation and asthma (community meeting, December 7, 2010)

Impacts of the Proposed Facility on Odors

The proposed facility will contribute to the already strong odors associated with the sewage treatment plant and residents' quality of life, well-being, stress levels, headaches, and upper respiratory illness.

The Association between Vectors and Health

According to the New Mexico Department of Health (2010) bubonic plague and hantavirus have been on the rise in New Mexico. Hantavirus is contracted by humans breathing in the aerosolized virus from infected rodents through urine, droppings or saliva. To prevent both of these potentially fatal diseases, the New Mexico Department of Health recommends limiting exposure to trash where rodents nest ("Health Data: Hantavirus", 2011).

Current Vector Conditions and Health in San Jose and Mountain View

There have been four non-fatal cases of hantavirus in 2008, two fatal cases in 2009, and one case in 2011. From 1990 - 2006 there were 124 cases of plague in the United States; 67 of these were in New Mexico, with 10 in Bernalillo County.

Impacts of the Proposed Facility on Vectors

The proposed facility will increase the numbers of rodents, insects, birds and microbes, particularly if waste is stored on-site over night or shipped into the facility via rail car, which in turn could contribute to an increase in infectious diseases in the Mountain View and San Jose communities as well as impacting US Foods' food distribution center and Ben E Keith.

Conclusions

Conclusions of this HIA suggest that for a relatively modest recycling achievement (20,100 pounds out of a total of 2.462 million pounds of waste accepted a day), the communities of Mountain View and San Jose will be burdened not only by waste imported from communities as far away as Santa Rosa, Gallup, and Truth or Consequences (Bernalillo County Board of County Commissioners Hearing, Court Reporter Transcript, page 53, December 14, 2010), but by neighborhood blight, lack of quality jobs, economic development that is counter to the recent trend in clean industry and commercial development, increased traffic congestion on already severely congested roads, traffic related injuries and fatalities, diesel emissions, noise, odor, and vectors. Taken together, these burdens will likely contribute to the already statistically significant high death rates and shorter life spans for Mountain View and San Jose residents and the potential for further environmental degradation, costly environmental remediation, and a decrease in the County's landfill space with waste imported from outside of the County boundaries.

Further, the authors learned that NMRT was not awarded the City of Albuquerque's contract for a single stream recycling facility (E. Abeyta, personal communication, February 22, 2011). Since NMRT's waste volume projections were based on a successful bid for this contact, it is unclear where NMRT's waste will be originating from, the types and volumes of waste that will be transported and accepted at the proposed facility, and whether the waste will be transported using rail or truck.

The HIA findings are presented below:

- Cumulative health risks associated with traffic congestions, diesel emissions, noise, and odor from the proposed facility in addition to environmental hazards associated with other existing industries.
- The predominantly Hispanic communities of Mountain View and San Jose not only suffer from higher death rates and shorter life spans, but from higher poverty, a greater number of heavy industries (Bernalillo County, Office of Environmental Health, 2006), and more severe contamination when compared to other areas in the County (US Environmental Protection Agency, 2011).
- For a relatively modest recycling achievement (20,100 pounds out of 2.462 million pounds of waste daily), the communities of Mountain View and San Jose will be burdened not only by waste imported from communities as far away as Santa Rosa, Gallup, and Truth or Consequences, but by decreased neighborhood quality, further poverty concentration, unavailability of quality jobs, and higher stress levels. Higher stress levels will contribute to increased susceptibility to cumulative environmental exposures resulting in shorter life spans and increases in already high death rates.

- The proposed facility is a significant departure away from the recent trend to attract clean industry and commercial development and, in exchange for modest job growth, will contribute not only to the existing environmental burden and potential costly clean-up, but to neighborhood blight, a stifled demand for commercial development by potential investors, and the potential for increased disease and disability among community residents and workers.
- Although the company would bring 90 – 120 jobs, these jobs would not necessarily go to residents living in San Jose and Mountain View and these jobs would be highly hazardous.
- It is likely that a corresponding increase in crash injuries and fatalities will occur with the introduction of 826 (for average waste volumes) to 2,684 (for peak waste volumes) heavy trucks travelling to and from the facility on Broadway, Blvd. on a given day.
- In addition to contributing to traffic congestion, already high crash rates, and further delays for 2nd Street at Rio Bravo, additional truck traffic along Rio Bravo would also impede residents' ability to evacuate their homes, many of which are located off of 2nd Street, south of Rio Bravo, in the event of an emergency.
- Increased diesel emission exposures from the heavy truck traffic associated with the proposed facility in addition to existing industrial air emissions will increase the already high burden of chronic disease deaths for the San Jose and Mountain View population and contribute to the asthma burden of children, particularly since the proposed transport route goes right in front of the East San Jose Elementary School.
- Given the close proximity of the proposed facility's transport route to the East San Jose Elementary School, the cumulative impacts from the noise of airplanes already using the east-west runway of the Sunport and the noise associated with increased heavy truck traffic could significantly impact not only the quality of life of residents, but the immune, cardiovascular and neurological systems of children at the school.
- The proposed facility will contribute to the already strong odors associated with the sewage treatment plant and residents' reports of poor quality of life and well-being, high stress levels, and headaches.
- The proposed facility will increase the numbers of rodents, insects, birds, and microbes, particularly if waste is stored on-site over night or shipped via rail car, which in turn could contribute to an increase in infectious diseases in the Mountain View and San Jose communities as well as impacting US Foods' food distribution center and Ben E Keith.

Based on study findings we recommend denying the requested special use permit.

Attachment 1. Criteria of Resolution 116-86 of the Bernalillo County Ordinance

Criteria A
A proposed land use change must be found to be consistent with the health, safety and general welfare of the residents of the County.

Criteria B
The cost of land or other economic considerations pertaining to the applicant shall not be the determining factor for a land use change.

Criteria C
A proposed land use change shall not be in significant conflict with adopted elements of the Comprehensive Plan or other Master Plans and amendments thereto including privately developed area plans which have been adopted by the County.

Criteria D
Stability of the land use and zoning is desirable; therefore, the applicant must provide a sound justification for land use change. The burden is on the applicant to show why the change should be made.

Criteria E
The applicant must demonstrate that the existing zoning is inappropriate because: 1) there was an error in the original zone map, 2) changed neighborhood or community conditions justify a change in land use, or 3) a different land use category is more advantageous to the community as articulated in the Comprehensive Plan or other County Master Plan, even though (1) and (2) above do not apply.

Criteria F
A land use change shall not be approved where some other permissive uses in the land use change would be harmful to adjacent property, the neighborhood or the community.

Criteria G
A proposed land use change which, to be utilized through land development, requires major and un-programmed capital expenditures by the County may be: 1) denied due to lack of capital funds; or 2) granted with the implicit understanding that the County is not bound to provide the capital improvement on any special schedule.

Criteria H
Location on a collector or major street is not itself sufficient justification of apartment, office of commercial zoning.

Criteria I
A zone change request which would give a zone different from the surrounding zoning to one small area, especially when only one premise is involved, is generally called a "spot zone". Such a change of zone may be approved only when: 1) the change will clearly facilitate revitalization of the Comprehensive Plan and any applicable adopted land-use plan; or 2) the area of the proposed zone change is different from surrounding land because it could function as a transition

between adjacent zones; because the site is not suitable for the uses allowed in any adjacent zone due to topography, traffic or special adverse land uses necessary; or because the nature of structures already on the premises makes it unsuitable for the uses allowed in any adjacent zone.

Criteria J

A zone change request which would give a zone different from the surrounding zoning to a strip of land along a stretch is generally called a "strip zoning". Such a change of zone may be approved only when: 1) the change clearly facilitate revitalization of the Comprehensive Plan and any applicable adopted sector development plan or area development plan, or 2) the area of the proposed zone change is different from surrounding land because it could function as a transit between adjacent zones; because the site is not suitable for the uses allowed in any adjacent zone due to topography, traffic or special adverse land uses nearby; or because the nature of structures already on the premises make the site unsuitable for the uses allowed in any adjacent zone due to traffic or special adverse uses nearby.

Attachment 2

NEW MEXICO
ENVIRONMENT DEPARTMENT

Environmental Protection Division
Solid Waste Bureau

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

1190 St. Francis Drive, Room S2050
P.O. Box 5469
Santa Fe, New Mexico 87502-5469
Telephone (505) 827-0197
Fax (505) 827-2902
www.nmenv.state.nm.us

DAVE MARTIN
Secretary

RAJ SOLOMON, P.E.
Deputy Secretary

Certified Mail – Return receipt Requested No. 70080500000112458153

February 14, 2011

Jerry Moffat, President
NMRT LLC
P.O. Box 1026
Huntington Beach, CA 92647-1026

RE: First Request for Additional Information (RAI), NMRT Proposed Permit Application for a Recycling and Transfer Station Facility in Albuquerque, New Mexico

Dear Mr. Moffat:

The Solid Waste Bureau (Bureau) has completed a preliminary review of the application submitted on October 14, 2010, by Molzen Corbin, for the NMRT Recycling and Transfer Station Facility Permit. The information provided has been determined to be incomplete. Therefore, the Bureau requests the following changes or additional information:

1. On page 6 of 53 under 20.9.3.8C(4)(a) and Appendix A page 1, NMRT did not provide a facility operators name. The Bureau assumes that Mr. Moffat (as President and COO of Rainbo) will not be the daily on-site manager in New Mexico. Please provide a disclosure form and operator (transfer station and recycling) certification documentation for the actual facility manager/operator that will be on-site daily per 20.9.3.8.C(3)&(4)(a), 20.9.5.8.C(1) and 20.9.7 NMAC. If Mr. Moffat will be serving as the on-site manager we need documentation of his New Mexico certification/s. Please be advised that certification can not be issued unless or until the person has a minimum of one year experience (documented) in the operation of a facility of the same type as certification is sought per 20.9.7.8.B(3).

2. On page 7 of 53 under 20.9.3.8.C(4)(f) there are no detailed facility plans or elevations for any of the interior or exterior of the proposed buildings (recycling/transfer and recycling and administration) signed by a PE as required. Location of doors, traffic flow, equipment (as listed on page 15 of Appendix A), sewer drains, sorting line, storage containers, fire suppression, restrooms, etc) need to be provided for these buildings. The location of any equipment outside the buildings also needs to be shown on the plans.

3. Under 20.9.3.8.C(6)(b) on page 7 of 53 and as found in Appendix A on page 15 there does not appear to be any equipment listed for disposing of solid waste to the landfill such as tarped transfer-trailers as is required? Please provide this information.

4. Under 20.9.3.8.C(6)(i),(ii) & (iv) on page 8 of 53 and under Appendix A, page 7-Traffic Plan, no Traffic Impact Analysis (TIA) has been completed. It mentions that one will be performed but it is required to be a part of the application. Please provide the TIA to address required issues.

5. Under 20.9.3.11.A(1) on page 11 of 53 there is no description of a survey or analysis performed to determine the characteristics of all waste to be accepted or processed. The response was only a generic description of the types of waste expected. The description should be a detailed survey of how much (%) of the different types of waste and recyclables to be expected. Composition of waste stream is also required under 20.9.3.8.C(6)(c)(i).

6. Under 20.9.3.11.A(2) on page 11 of 53 and under 20.9.3.15.B on page 12 of 53 - plans and elevations drawn to scale of all structures are not provided (see similar comment in Item #2 above). Only rendering drawings are provided. Detailed plans need to be provided.

7. Under 20.9.3.15.C(4) on page 12 of 53, the map does not show the 100 foot boundary line around the facility to indicate if there are any structures. Please provide a 100 foot boundary line as required.

8. Under 20.9.3.15.D on page 12 of 53, the location/s, specifications and hook-ups of the mentioned clarifiers are not found. Please provide this information.

9. Under 20.9.3.15.E on page 12 of 53 the narrative mentions recyclables may be shipped via rail. There is no mention anywhere in the application of the location where this will take place at the facility or a description of how this will take place (equipment to be used, loading description, etc.). Please provide this information.

10. Under 20.9.3.15.E on page 12 of 53 there is no frequency of solid waste disposal, recyclable shipments or destination of either. The section also mentions "landfill" but does not say which landfill. Please provide this information.

11. Under 20.9.4.12.C on page 18 of 53, please provide the report from the geotechnical firm on their findings for the potential sub-grade issue.

12. Under 20.9.4.12.D on page 18 of 53 there is no documentation provided that there are no historically or archeologically significant sites. Please provide this documentation.

13. Under 20.9.5.8.B(1) on page 19 of 53, it does not say specifically who the certified transfer station operator is or provide documentation of this operator certification in New Mexico. Also reference Item #1 above on the same topic. Please provide this information.

14. Under 20.9.5.13.C on page 23 of 53 please describe specifically what the audible emergency system actually consists of.

15. Under 20.9.5.13.E on page 23 of 53 please describe the location, use and specification detail of the industrial clarifier. Also noted in Item # 7 above.

16. Under 20.9.5.16.A(5) and under Appendix C, Waste Screening Program form, the specific requirements of this section are not found on the form. Please revise the form to include the items listed (a-e) for recording load inspections.

17. Appendix A page 3 – Adjacent Land Uses, indicates Bernalillo County zoning as M-2 but does not show the facility has received a special use zoning permit for solid waste transfer station/recycling facility from the County. Please provide this documentation.

18. Appendix A page 3 – Nature and Quantity of Wastes, does not describe the origin of the waste stream or the composition of the waste stream. It indicates 228 TPD of "roll-off" waste but does not say what the "roll-off' waste composition is. It also indicates approximately 1,231 TPD of waste entering the facility. The Bureau would like to know the origin of this waste since the City of Albuquerque picks up all waste with the city limits and hauls it to Cerro Colorado Landfill and Waste Management picks up Bernalillo County residential waste and some C&D waste within Bernalillo County and hauls it to Valencia Regional Landfill. The Bureau questions where 1,231 TPD of waste will be coming from. Please provide this information.

19. Appendix A page 3, last sentence indicates there will be universal waste drop-off and collection center located at gate #1. Please describe in detail the set-up of the center and what wastes will be allowed and how they will be handled.

20. In Appendix A, the Bureau could not find where a description of alternative handling of waste as required under 20.9.3.8.C(6)(d) was described. Please provide this information.

21. Under Appendix A on page 17 – Storage of Waste, it indicates waste will not be stored on-site for more than 48 hours. The 48 hour storage is also indicated in several other sections of the application. 20.9.5.11. I NMAC requires that all waste be removed at the end of each day "unless otherwise approved". If the facility desires to store waste longer than the end of each day, then a case must be made to the Bureau as to why 48 hour storage might be needed and how will the material be contained and handled so as not to provide vector harborage or odors. Please provide.

22. Under Appendix A page 17- Fire Fighting Equipment, in the contingency plan please provide a map of the site including buildings that shows the location/s of all safety equipment (fire extinguishers, fire hoses, first-aid kits, ppe, etc).

23. Under Appendix C – NMRT's Waste Screening Program, it does not include frequency of waste screens. The Bureau policy for minimum screening is at least once a day or 1% of the total loads, whichever is greater. Please put this in the plan. In addition the written plan should include all of the information as required under 20.9.5.8.B(2) & (5). Some of these items are missing. Please provide one waste screen plan (to include the revised form as noted in Item #16) with the required information as requested above.

24. Appendix C - NMRT's Odor Control Mitigation Program, provide more detailed information on what "special odor control devices" will be used and describe specific "protocols" for incoming odiferous loads per 20.9.3.8.C(6)(a).

25. Under Appendix E – Public Notice there is no official documentation of publishing of the Notice and certified mailings as required in 20.9.3.8.G. Documentation needs to be provided for including English and Spanish translations.

26. Under Appendix C – Crisis Management Plan, needs to be rewritten to comply with each of the specific listed items for an Emergency Contingency Plan listed in 20.9.5.15 NMAC and as required under 20.9.3.8.C(7). Be sure to include the items required in 20.9.5.8.B(4),(5),(6) & (7) in the plan. Please label it as an Emergency Contingency Plan.

28. Under Appendix A page 13 – Signage – please use the requirements listed under 20.9.5.8.A(3) in addition to those in this paragraph to make sure you addressed all of the items listed here.

29. On page 8 of 53 under 29.9.3.8.C(6)(e) please provide an anticipated start-up time period. Statement such as "within 180 days after secretary issues the permit" or whatever time period you feel would be adequate, but it does need to be stated.

30. Under Financial Assurance (FA) on page one Appendix F, you refer to the old Regulations citations in five places. Please update these to the current Rules. In the fourth paragraph you quote the old regulations in using Section 505.B describing closure costs. The new Rules do not allow for this exemption so please remove this paragraph. There is a caveat under 20.9.6.8.O that does allow for early satisfaction of the 30-year post-closure period which you might mention that you will attempt to satisfy at closure. Please indicate that FA in the amount indicated will be obtained within 90 days of the permit being issued. Also please show what you used to come up with the closure costs on page 2 of the FA such as: clean buildings – did you use a $ per sq ft or something else to arrive at $12,500 – the same on #2 – on #3 use a $ per acre cost and use some $ amount per acre, sq footage, boring, etc for # 4-7 to show how you arrived at the final numbers.

31. Please add an Appendix H to include the letter from FAA dated October 26, 2010 on requirements for locating the facility near the Sunport (Albuquerque airport).

Please submit the requested information within 120 days of receipt of this letter in accordance with 20.9.3.17 NMAC. Should you have any questions, please feel free to contact me at (505) 827-2328, or by e-mail at terry.nelson1@state.nm.us.

Sincerely,

Terry Nelson
Permit Section Manager

emcc: James Dyer, Permit Section
Tara Davenport, Molzen-Corbin
Auralie Ashley-Marx, Chief, SWB

BIBLIOGRAPHY

Acevedo-Garcia, D, Osypuk, T, McArdle, N, Williams, D. (2008). Toward a policy-relevant analysis of geographic and racial/ethnic disparities in child health. *Health Affairs* 27:321-333.

Baldwin, C., Bell, L., O'Rourke, M. (1999). Odor sensitivity and respiratory complaint profiles in a community-based sample with asthma, hay fever, and, chemical odor intolerance. *Toxicology and Health* (15)403-409.

Bernalillo County Board of County Commissioners Hearing (Dec. 14, 2010). *Court Reporter Transcript*.

Bernalillo County Department of Building, Planning and Zoning (Nov. 3, 2010). *Staff Report to County Planning Commission*.

Bernalillo County Office of Environmental Health (2002). *South Valley Environmental Quality Profile.*

Bernalillo County Planning Commission Hearing (Nov. 2010). *Court Reporter Transcript.*

Clean Air Task Force. (2005). *Diesel and Health in America: The Lingering Threat*. Boston, MA.

Clougherty, J. & Kubzansky, L. (2009). A framework for examining social stress and susceptibility to air pollution in respiratory health. *Env. Health Perspectives* 117:1351-1358.

Dratva, J., Zemp, E., Felber-Dietrich, D., Bridevaux, P., Rochat, T., Schindler, C., Gerbase, M. (2010). Impact of road traffic noise annoyance on health-related quality of life: results from a population-based study. *Qual Life Res* 19(1)37-46.

Environmental Protection Agency. (1978). *Noise: a Health Problem*. Washington, DC: Office of Noise Abatement and Control.

Evans, G. (2004). A multi-methodological analysis of cumulative risk and allostatic load among rural children. *Developmental Psychology* 39(5)924-933.

Evans, G., Lercher, P., Meis, M., Ising, H., Kofler, W. (2001). Typical community noise exposure and stress in children. *J Acoust Soc Am* 109(3)1023-1027.

Faber, D. & Krieg, E (2002). Unequal exposure to ecological hazards: environmental injustices in the Commonwealth of Massachusetts. *Environmental Health Perspectives* 110(2)277-288.

Fisher, K (2009). The rhino in the colonia: How Colonias Development Council V. Rhino Environmental Services, Inc. set a substantive state standard for environmental justice. Retrieved from: http://legacy.lclark.edu/org/envtl/objects/39-2_Fisher.pdf.

Human Impact Partners (2011). Current Projects. Retrieved from: http://www.humanimpact.org/projects.

Inform Building Environmental Literacy (2011). Facts on Greening Garbage Trucks: New Technology for Cleaner Air. Retrieved from: http://www.informinc.org/pages/research/sustainable-transportation/fact-sheets/119.html

Ising, H. & Ising, M. (2002). Chronic cortisol increases in the first half of the night caused by road traffic noise. *Noise & Health* 4(16)13-21

Ising, H. & Kruppa, B. (2004). Health effects caused by noise: Evidence in the literature from the past 25 years. *Noise Health*. Retrieved from: http://www.noiseandhealth.org/text.asp?2004/6/22/5/31678.

Jackson, R. & Kochtitzky. (2001). Creating a healthy environment. Sprawl Watch Clearinghouse Monograph, Washington, DC (http://www.sprawlwatch.org)

Joint Center for Political and Economic Studies. (2011). Place Matters for Health in Bernalillo County: Ensuring opportunities for good health for all. Manuscript in preparation.

La Scala, E., Gerber, D., Gruenewald, P. (2000). Demographic and environmental correlates of pedestrian injury collisions: a spatial analysis. *Accid Anal Prev* 2000(32)651-658.

Levine, N., Kim, K., Nitz, L. (1995). Spatial analysis of Honolulu motor vehicle crashes: I. Spatial patterns. *Accident Analysis & Prevention.* 27(5):663.

Mid-Region Council of Governments (2011). *General Crash Data and Trends 2000 – 2008.*

Mid-Region Council of Governments (2011). Station area planning and development. Retrieved from: http://www.mrcog-nm.gov/transportation-mainmenu-67/nm-rail-runner-mainmenu-136/station-area-plans-mainmenu-187?showall=1

Mid-Region Council of Governments (2011). *Traffic congestion 2008 SE Data on 2008 Networks PM Peak Hour V/C.*

Mid-Region Council of Governments (2011). *Traffic congestion 2015 with a Partially Built Up Network*

Morello-Frosch, R. & Jesdale, B. (2006). Separate and unequal: Residential segregation and estimated cancer risks associated with ambient air toxics in U.S. metropolitan areas. *Env. Health Perspectives* 114:386-393.

Morello-Frosch, R. & Lopez, R. (2006). The riskscape and the color line: Examining the role of segregation in environmental health disparities. *Env. Research* 102:181-196.

Natelson, B. & Lange, G. (2002). A status report on chronic fatigue syndrome. *Env Health Perspect* 110 (Suppl 4)673-677.

New Hampshire Department of Environmental Health (2008). Odors and Your Health Fact Sheet. Retrieved from: es.nh.gov/organization/commissioner/pip/factsheets/ard

New Mexico Department of Health (2011). Health Data: Hantavirus. Retrieved from: http://www.health.state.nm.us/ERD/HealthData/hantavirus.shtml.

New Mexico Office of Natural Resources Trustees. (2011). Mountain View Nitrate Plume Restoration Project. Retrieved from: http://www.onrt.state.nm.us/SouthValleySuperfundSite.html

NMRT, LLC. (2010). *Justification – submitted to Bernalillo County Department of Building, Planning and Zoning.*

NMRT, LLC. (Dec. 14, 2010). *Presentation to the Bernalillo County Board of County Commissioners.*

NMRT, LLC. (2010). *Recycling/Transfer Station Permit Submitted to the New Mexico Environment Department.*

Salvesen, D. & Renski, H. (2003). The importance of quality of life in the location decisions of new economy firms. Center for Urban and Regional Studies, University of North Carolina at Chapel Hill, NC 27599

Schiffman, S. & Williams, C. (2005). Science of odors as a potential health issue. *Journal of Environmental Quality* 34:129-138.

US Census Bureau. (2005-2009). American Community Survey, 2009 Detailed Tables; generated by Srikanth Paladugu; using American FactFinder; Retrieved from: http://factfinder2.census.gov.

US Environmental Protection Agency (2011). South Valley (Bernalillo County) Albuquerque, NM, EPA ID# NMD980745558 Site ID: 0600881. Retrieved from: http://www.epa.gov/region6/6sf/pdffiles/0600881.pdf.

Waste Technology (2011). Unsorted residual waste material recovery facility (dirty mrf). Retrieved from: http://mbt.landfill-site.com/Dirty_MRF/dirty_mrf.html.

West, A (Jan. 18, 2011). *Minutes of Waste Management meeting with Mountain View and San Jose community members.*

Yen, I. & Bhatia, R. (2002). How increasing the minimum wage might affect health of San Francisco residents: A discussion of the links between income and health. Working Paper.

Albuquerque San Jose

Developing Sustainable Transportation Strategies for Albuquerque's San Jose Neighborhood

Prepared by students of Dr. Gregory Rowangould

CE491/598 Design of Sustainable Transportation Systems and Policy

Spring 2014, University of New Mexico

UNM SCHOOL of ENGINEERING

Table of Contents

Acknowledgments

This report was authored by students of Dr. Gregory Rowangould during Spring semester 2014 as coursework for CE491/598, Design of Sustainable Transportation Systems and Policy, a Civil Engineering course offered by the School of Engineering at the University of New Mexico. Students of Professor Rowangould:

- Rahul Reddy Gade
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- Polyana Chamas Falcao
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The authors would like to thank San Jose Neighborhood residents Esther and Steven Abeyta for providing input and feedback on the report. The Abeytas have worked tirelessly to improve the quality of life in their community.

Thanks is also due to Jacque Garcia of Bernalillo County Place Matters and Juan Reynosa of the Southwest Organizing Project for their involvement with the San Jose Neighborhood.

List of Figures

Image Attribution

"Figure 16. Mixed use development concepts" on page 39 uses photos from the following two sources:

- "Walmart Neighborhood Market" by Eric Allix Rogers can be found on Flickr at https://www.flickr.com/photos/reallyboring/6663733695/
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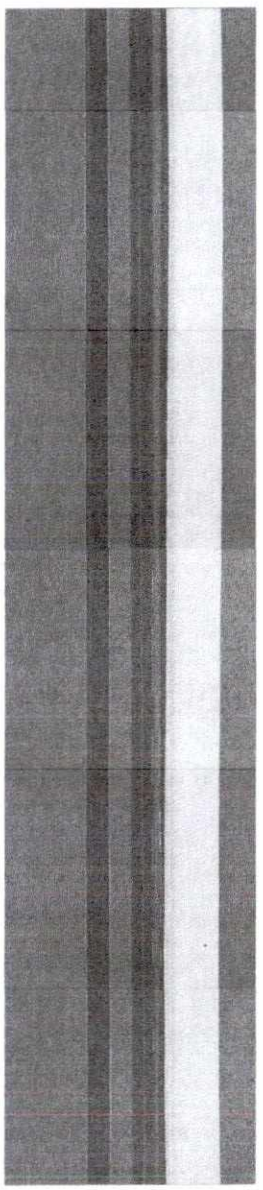
1. Executive Summary



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1.1. Introduction

As part of its mission statement, the University of New Mexico (UNM) strives to "...Actively support social, cultural, and economic development in our communities to enhance the quality of life for all New Mexicans" (University of New Mexico, 2010). To meet that end, Dr. Gregory Rowangould, Civil Engineering professor with the School of Engineering at UNM, has engaged with the San Jose Neighborhood in Albuquerque's South Valley in an effort to address some of the concerns the neighborhood is facing.

Students in Dr. Rowangould's CE491/598 course, "Design of Sustainable Transportation Systems and Policy," developed this report as an approach towards a technically and politically feasible sustainable transportation plan for the neighborhood. The paper explores the relationship between a wide range of potential land-use and transportation strategies and identifies those that are most applicable to the area and have the greatest opportunity to resolve the many challenges the neighborhood faces. The research team describes each individual strategy and policy in the plan, discusses the goals and implementation of each, and explains how each strategy and policy coalesce to form a cohesive plan.

Issues related to transportation represent only one aspect of the community's concerns, but resolving existing problems related to air pollution, congestion and safety will greatly benefit the community in the short term, and have the potential to mitigate negative impacts of a proposed road extension through the area.

It is the sincere hope of the authors that this report not only provides technical information to community leaders, but amplifies their voice as they engage with government and industry to find a more sustainable solution.

1.2. Document Structure

Background

The report begins with the history and geography of the San Jose Neighborhood, enumerating its many transportation-related environmental concerns. The neighborhood has historically housed a largely minority and low-income population, and a lack of political clout has led to the encroachment of heavy industry and high levels of heavy vehicle traffic, resulting in noise, air pollution, and ground and water contamination.

A major source of concern for residents is a proposal to extend Sunport Boulevard through the neighborhood, connecting residents in southwest Albuquerque to the airport via this residential area.

Transportation Strategies

This section discusses transportation options in general and offers background information on many strategies successfully implemented in other communities worldwide.

Section 3.2, "Walking and Biking," lists the benefits of active transportation measures such as walking and biking, and reviews case studies of successfully implemented "Safe Routes to School" and bike sharing programs.

Section 3.3, "Transit," offers a primer on many different forms of transit systems: municipal bus, light rail, commuter / heavy rail, bus rapid transit, shared ride vans, informal shared ride, and taxis. It also briefly touches on numerous evaluation factors involved in planning transit systems.

Section 3.4, "Policy Options," details numerous regulatory strategies for mitigating negative impacts of transportation. Congestion pricing levies a fee on using certain roadways under specific conditions. Vehicle-time regulations and peak hour operation policies prohibit traffic — especially heavy truck traffic — on certain days or at certain times. Vehicle weight and size regulations designate dedicated truck routes to avoid conflicts with other transportation modes or land uses. Anti-idling laws attempt to minimize unnecessary engine idling, saving fuel and reducing air pollution. Complete Streets policies establish design guidelines to ensure that streets accommodate all modes of transportation, including pedestrian, cyclist, and transit travel. Traffic calming measures reduce traffic speeds and divert some traffic to other roadways.

Section 3.5, "Alternative Fuels," discusses a number of potential alternatives to gasoline and diesel, weighs their effectiveness regarding the San Jose neighborhood, and proposes policies to encourage their use.

In Section 3.6, "Freight," the report speaks at length about the rail and heavy truck industries and the negative impacts they impose on surrounding communities. It includes strategies for mitigating these impacts, such as changes to route and facility design, fleet management technologies, modifications to shipper/receiver actions, and emissions control policies.

3.7, "Land Use," explores the influences on transportation from development characteristics such as population density, the diversity of functions and uses within a community, street design, and implementation of transit and alternative transportation infrastructure.

Implementation

The section on Implementation offers specific, achievable approaches most relevant to the neighborhood.

Creating a community planning and action group (Section 4.1 on page 43) provides an environment in which neighborhood residents can interact with local industry and government agencies in a civil, participatory manner. Creating such a group also opens the opportunity to attract funding for studies to assess the social, environmental, and transportation-related consequences of proposed projects.

Establishing truck routes and weight restrictions (Section 4.2 on page 44) diverts truck traffic away from the main residential areas in the neighborhood, decreasing pollution and noise and avoiding vehicular conflicts. This section also provides suggestions for accommodating or relocating the Big Bear Petroleum business on Commercial Street, which is at present the only obstacle to deterring all trucks away from residential corridors.

Engaging in comprehensive land use planning and zoning efforts (Section 4.3 on page 45) recommends working with the city and the county to take a proactive approach in guiding the future development of vacant areas, attracting businesses that not only support the airport but provide job opportunities for residents.

The current transit service in the neighborhood is highly inadequate, in spite of being a major means of transportation for many residents. Section 4.4 on page 45 recommends improvements to the existing bus service: creating a more direct route with longer hours, higher frequency, and more connections to other major transit routes.

Adopting complete streets design (Section 4.5 on page 46) would begin to address the conflicts among various road users, providing adequate sidewalks and dedicated or protected bicycle facilities. The proposed Sunport Boulevard extension does incorporate some complete streets concepts such as bike lanes and sidewalks, but does not consider the incompatibilities between these transportation modes and the heavy truck traffic that exists in the area. Additionally, the proposed project limits street redesign to a small portion of Woodward Avenue and does not extend these improvements through the neighborhood.

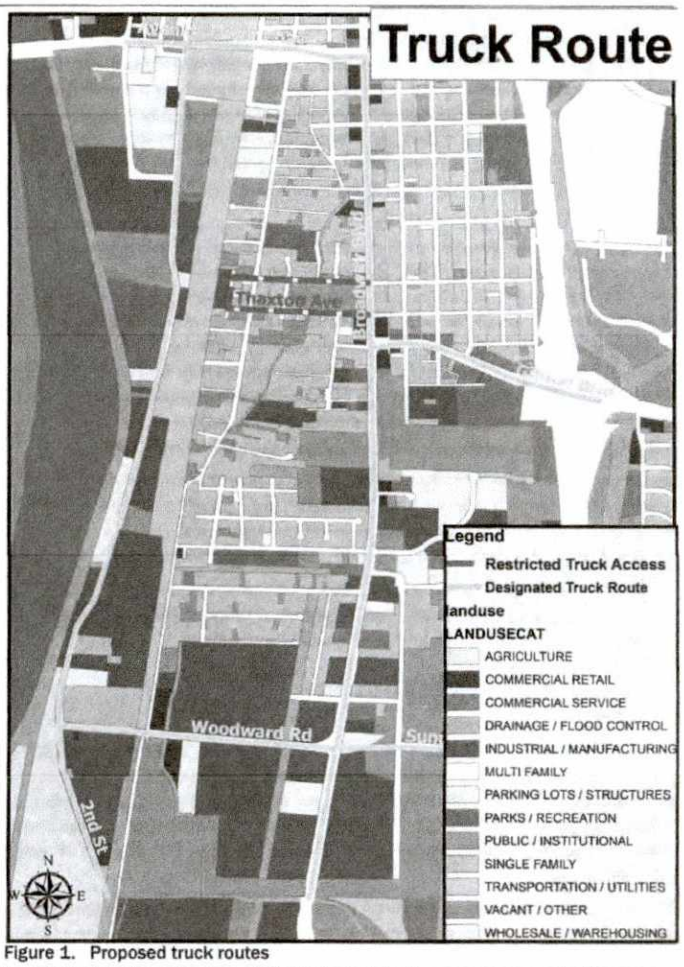

Figure 1. Proposed truck routes

Designated truck routes (in yellow) divert truck traffic away from residential areas, while Thaxton Avenue provides limited truck access for customers of Big Bear Petroleum

Clean air initiatives (Section 4.6 on page 47) dovetail with all of the aforementioned strategies and adds an additional regulatory layer to protect residents from the harmful effects of pollution. This section also recommends working with the railyards and government officials to upgrade or replace existing rail equipment with more modern solutions with low or no emissions.

Above all, this report suggests a positive outlook moving forward, with residents seeking win-win situations that not only protect them from harm but encourage economic development and upward mobility that improves their quality of life and meets the long-term goals and objectives of local industry and government groups (Section 4.7 on page 47).

Conclusions

The report concludes with an explanation of methodologies and recommendations for future study. The nature of this report – as the final project of a semester-long class – precluded any in-depth simulation and modeling of traffic demand, pollutant emissions, or land use and development patterns, but many of these options are offered as avenues for additional research.

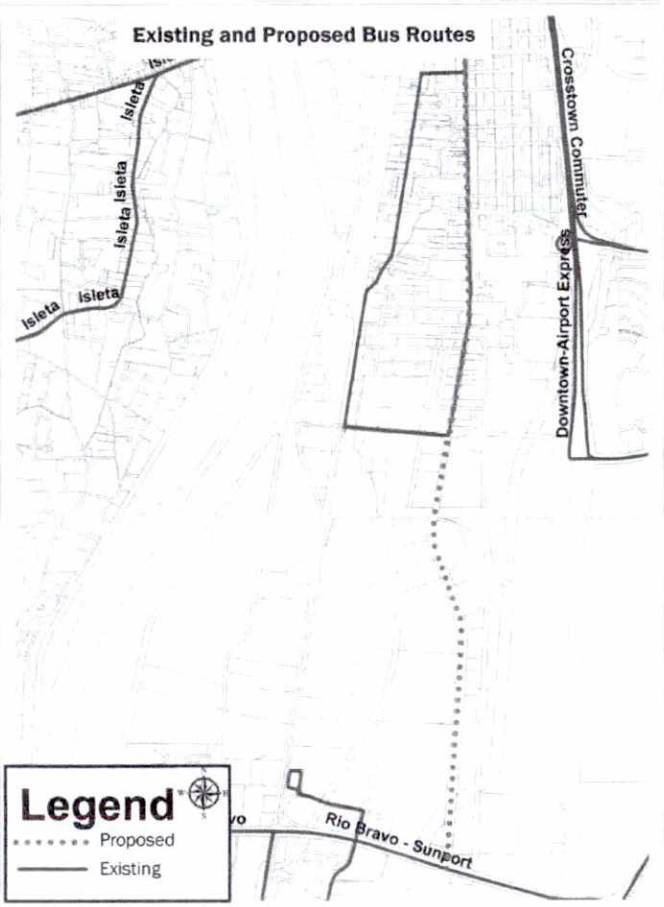

Figure 2. Existing and proposed bus routes
This figure illustrates a proposed route up and down Broadway Boulevard, which would connect the San Jose Neighborhood with multiple popular bus routes along Central Avenue (66/766/777), Lomas (5/11/790), and Menaul (8)

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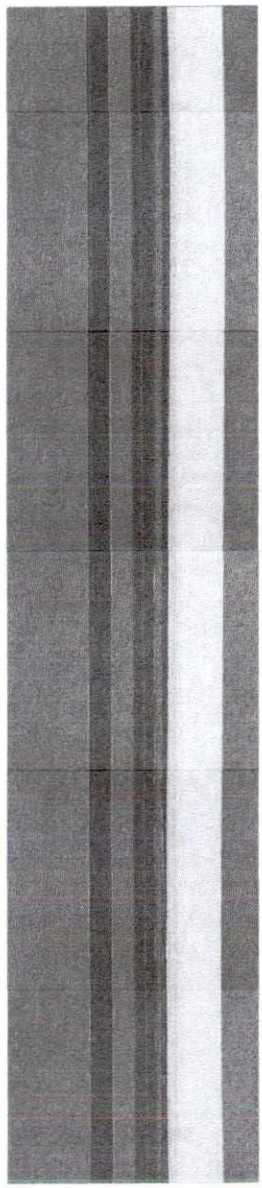
2. Background

An introduction to the San Jose Neighborhood and the transportation-related issues it faces



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2.1. Study Area

The San Jose Neighborhood in Albuquerque's southeast quadrant is bounded to the east by Interstate 25, to the west by the railroad tracks, to the south by Rio Bravo Boulevard, and to the north by the South Broadway neighborhood. The northern half of the neighborhood is primarily residential, while the southern portion features largely industrial uses (the areas adjacent to the residential areas are zoned for heavy industry).

San Jose neighborhood faces many obstacles. Since its inception in the late 19th century as a home for rail workers, the community has historically housed predominantly minority residents with low incomes, leading to a marginalized population without a voice to oppose the heavy industry encroaching onto its borders. The heavy industry and close proximity to the interstate contribute to high levels of heavy vehicle traffic and visual blight, resulting in many sources of air, water and noise pollution; Figure 3 illustrates the proximity of the railroad and some other industrial activities to residential areas.

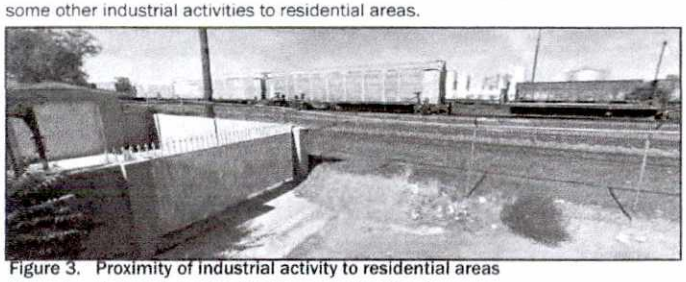


Figure 3. Proximity of industrial activity to residential areas
The railyard abuts homes in the San Jose Neighborhood. Image via Google Maps.

2.2. Socio-Economic Factors

The San Jose neighborhood in Albuquerque is predominantly low income; less than 14% of the working population earns more than $3,333 per month (US Census Bureau, 2011). Per the data analysis website Neighborhood Scout, income in San Jose is lower than income of 90.7% of U.S. neighborhoods. The website also reports that 35.3% of the children here live below the federal poverty line, a number greater than 79.4% of U.S. neighborhoods. The estimated San Jose crime index is 5% higher than the Albuquerque average and the Albuquerque crime index is 40% higher than the New Mexico average (Neighborhood Scout, 2014).

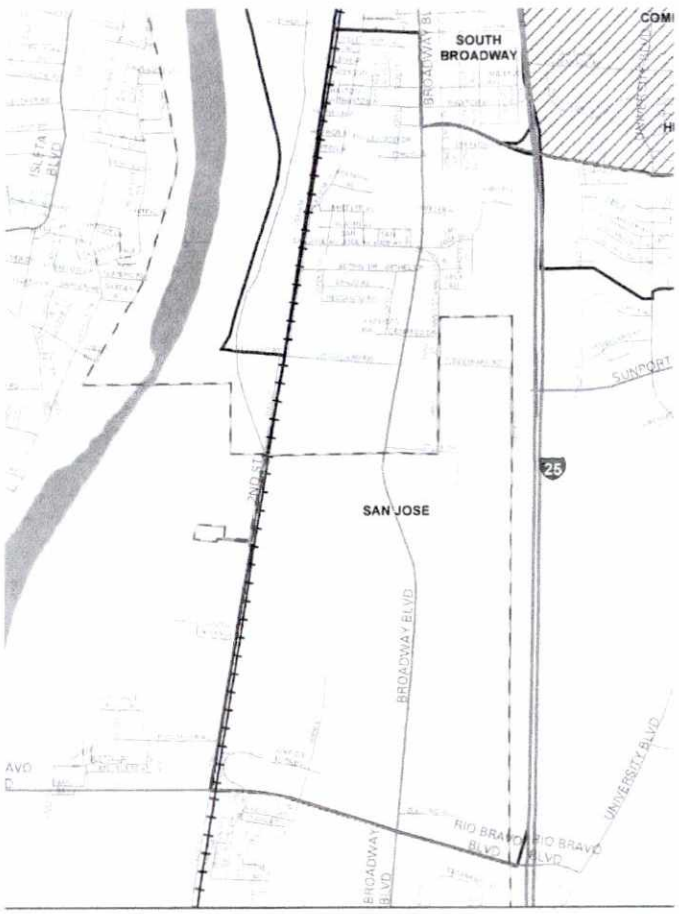
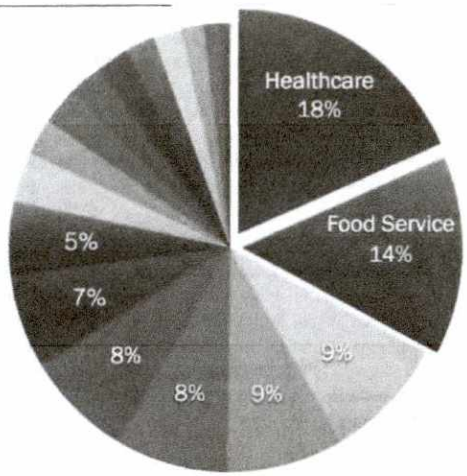


Figure 4. Map of the San Jose Neighborhood
An illustration of the bounds of the San Jose Neighborhood, as drawn by the City of Albuquerque



- Health Care and Social Assistance
- Accommodation and Food Services
- Educational Services
- Retail Trade
- Administration & Support, Waste Management and Remediation
- Construction
- Manufacturing
- Public Administration
- Other Services (excluding Public Administration)
- Wholesale Trade
- Professional, Scientific, and Technical Services
- Real Estate and Rental and Leasing
- Information
- Finance and Insurance
- Transportation and Warehousing
- Arts, Entertainment, and Recreation
- Management of Companies and Enterprises
- Utilities
- Agriculture, Forestry, Fishing and Hunting
- Mining, Quarrying, and Oil and Gas Extraction

Figure 5. Jobs of employed residents by industrial sector
Data from US Census Bureau, "On the Map"

Figure 6. Employment destinations of employed persons earning less than $1,250 per month
The "On the Map" tool developed by the US Census Bureau depicts houring and employment data for residents of various geographies and socio-economic conditions. In the map below, the purple hue indicates locations of jobs; the darker the color, the greater the concentration.
Residents of the San Jose Neighborhood who earn less than $1,250 work in the areas shown at below left. These concentrations align with job locations of similar incom-earners across Albuquerque as a whole, below right.
Data and images from US Census Bureau, "On the Map"

Figure 7. Proposed alternatives for the Sunport Boulevard alignment
From a Bernalillo County Public Works presentation to a public meeting on September 18, 2013

2.3. Transportation Issues

The railroad that marks the west boundary of San Jose attracts a high concentration of heavy industrial activity. Rail car movements at the freight rail yard towards the south edge of the neighborhood at the at-grade road crossing often blocks traffic on Woodward Road for up to 20 minutes according to residents. Both trains and semi-trucks idle for extended periods of time at the rail-yard and elsewhere in the neighborhood, subjecting residents to unpleasant noise and harmful exhaust fumes.

To compound these existing problems, Bernalillo County is planning a roadway and intersection modification to extend Sunport Boulevard, which currently terminates at Interstate 25, to connect to the eastern end of Woodward Road (Bernalillo County, 2013). To relieve congestion at two interstate off ramps, Bernalillo County officials are contemplating extending Sunport Boulevard through the San Jose Neighborhood. The extension would also provide additional means of accessing the Sunport for those living on the southwest side of town. The neighborhood is concerned about the impact of increased traffic through their residential area, expected to climb from 6,000 vehicles per day to over 21,000 (Bernalillo County, 2013).

Planners have intended to extend Sunport Boulevard for the past 30 years as part of a master plan (KOAT, 2013). In the coming months, they aim to finalize plans to extend the street west to Broadway Boulevard, as shown in Figure 7.

Neighborhood leaders claim that Bernalillo County did not involve residents in the planning process for this extension until the project was well into the planning phases, and presented the neighborhood only three options, none of which addressed residents' concerns about the long-term implications this project would have on their quality of life.

The three alternative options proposed all had a connection to Broadway Boulevard with a labeling of Alternative A, D & H. As seen in Figure 7 "ALT A" connects to Woodward Road with the installation of a new intersection at Broadway Boulevard; planners have identified this as the preferred option. Alternative D route connects south of Chevron bulk fuels and Alternative H connects even further south, just north of the New Mexico Department of Transportation equipment yard. While it is common engineering/planning practice, and often required for environmental review (i.e.,

In the San Jose neighborhood, 32.8% of those employed work in food service, hospitality, or healthcare. A further third work in education, retail, administration, and construction (US Census Bureau, 2011).

The US Census Bureau maintains a web-based mapping and reporting application known as OnTheMap, which uses the Bureau's Longitudinal Employer-Household Dynamics data to show where employers work and live. This tool illustrates that almost 98% of employed residents leave the neighborhood for their place of employment. In fact, over 10% of employed residents work more than 10 miles away (US Census Bureau, 2011).

> Almost 98% of employed residents leave the neighborhood for their place of employment. In fact, over 10% of people work more than 10 miles away.

The employment destinations of these residents align closely with major employment centers of Albuquerque: Downtown, University, Uptown, and the Jefferson Corridor (See Figure 6). These areas provide many jobs in the food service, hospitality, and healthcare industries, which together account for nearly a third of the employment of San Jose residents (Ibid).

NEPA), to present multiple scenario options for analysis, the options developed by the county do not appear to address any concerns the residents have raised.

The proponents of the extension project claim that connecting Sunport Boulevard to Broadway facilitates access to the airport from the West Side of Albuquerque and eases traffic for the Gibson Boulevard and Sunport Boulevard interchanges at I-25. They consider the extension as a necessary reaction to Albuquerque's growing population.

The community, however, has many concerns about this project. Some critics worry that it will impact existing Superfund sites and air quality in the area. The project is scheduled to disrupt six Superfund wells (EPA #NMD980745558) that monitor the progress of contaminated groundwater cleanup. Other neighbors who live on Williams Street are worried it will become a cut-through for truck traffic when trains block at-grade rail crossings. They are also concerned about the impact of increased traffic through their residential area as traffic is expected to climb from 6,000 vehicles per day to over 21,000 (Bernalillo County, 2013). The increase in traffic may potentially increase air pollution and noise levels and decrease pedestrian safety.

2.4. Other Issues

Transit service in the community is limited to a single line, the #16/18 Broadway/University/Gibson route known as "The BUG." Winding through the city along three major corridors, it connects the community of San Jose to various neighborhoods and activity centers. While the BUG allows for transfers to other transit routes, the line itself does not connect to any of the major employment centers identifed in Figure 6 as important to the neighborhood. The extremely circuitous route requires an hour to travel from one end to the other. The Bug runs from about 6am to 6pm daily, hours of service which do not meet the needs of anyone working a late shift - a frequent requirement of the industries employing those living in San Jose.

The neighborhood suffers from many transportation-related pollution issues, not least of which is the air pollution from the railroads. Abutting the train tracks on Commercial Street (between Thaxton and Anderson Avenues), Big Bear Petroleum draws truck traffic through the residential neighborhood. The neighborhood is also home to an EPA Superfund hazardous waste site, which is being actively monitored in hopes of mitigating the ground and water pollution that threatens the residents.

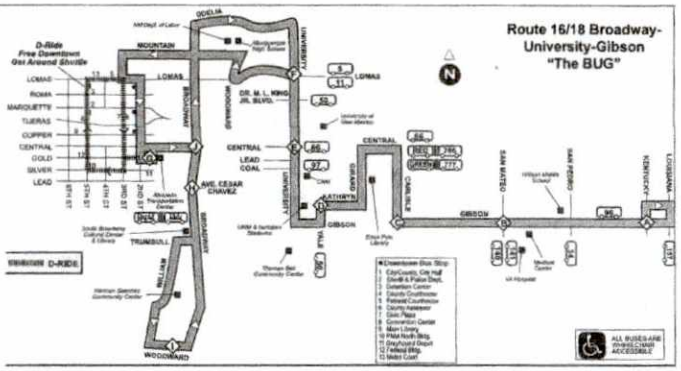
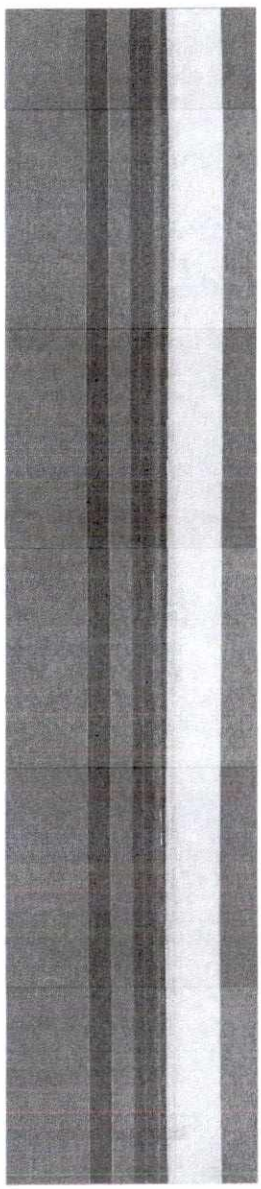


Figure 8. Route of the #16/18 Broadway-University-Gibson bus route
Official bus route, ABQ Ride.

3. Transportation Strategies

A primer in various modes of transportation and policies that relate to the San Jose Neighborhood



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3.1. A Multi-Modal Approach

It is crucial to expand the scope of a transportation study beyond discussion strictly of single-occupancy vehicle options. Comprehensive transportation planning must consider all modes of transportation, including walking, biking, cars, and freight vehicles. It is also important to recognize the interconnectivity between transportation and land use patterns. Transportation plans in the area must be integrated with land use planning. The various options discussed below illuminate viable transportation solutions for the San Jose Neighborhood.

3.2. Walking and Biking

3.2.1. The Benefits of Physical Activity

Over the years researchers have repeatedly documented the benefits of walking and bicycling both on human health and on the environment. The Federal Highway Administration (FHWA) recognizes the following as primary measurements quantifying the benefits of cycling and walking:

- Reduced fossil fuel use;
- Lower emissions of carbon dioxide (CO2), carbon monoxide (CO), nitrogen oxides (NOx), and volatile organic compounds (VOCs);
- Lightened roadway congestion at peak travel times;
- Fewer VMT (vehicle miles traveled);
- Lower body mass index and increased physical activity (Federal Highway Administration, n.d.).

Physical activity has appreciable effects on many aspects of morbidity such as heart disease, diabetes, some types of cancer, and aspects of mental health (including anxiety and depression) and improving functional health in elderly people. (Plas, n.d.) Physical activity is especially important for children in combating increased rates of Type I and II diabetes and rising rates of obesity (Boarnet et.al, 2005). The last two decades have witnessed a significant decline in walking among children in the United States: today, fewer than 16% of students aged 5 to 15 walk or bike to school, compared to 48% of students three decades ago (U.S. Environmental Protection Agency, 2003).

Fewer than 16% of students aged 5 to 15 walk or bike to school, compared to 48% of students three decades ago.

Encouraging bicycling and walking requires ensuring that adequate walking and bicycle facilities exist. For walking, this includes sidewalks, public spaces, street lighting and safe street crossings. For bicycling, this includes relatively wide curb lanes, on-street bike lanes or off-street bike paths, bicycle parking, traffic calming, and amenities such as showers at the workplace (Forsyth and Oakes, 2013).

3.2.2. Case Studies

Two successful case studies show how improvements can foster more (and safer) pedestrian and bicyclist travel. In the state of California the Safe Routes to School program was designed to improve safety for children's bicycling and walking and to increase the number of children who do so. Parents were surveyed and observations were made of vehicle and pedestrian traffic before and after the project construction.

This survey identified the most successful implementation strategies:

- Address deficient or absent sidewalk facilities near schools with moderate or high amounts of walking.
- Include traffic control devices to regulate yielding at intersections where large volumes of vehicle and pedestrian traffic intersect.
- At schools with low levels of walking or bicycle travel, provide education campaigns or additional construction improvements to encourage students to walk or bicycle to school.
- Schools should be encouraged to leverage funds for traffic improvements by providing education that encourages students to walk and bicycle safely to and from school (Boarnet et.al, 2005).

It is also reported that the fraction of children observed walking exclusively on the sidewalk increased from 35% before SR2S construction to 65% after SR2S construction at Sheldon Elementary, from 58% to 96% at Valley Elementary, and from 25% to 95% at West Randall Elementary.

The study demonstrates that children's safety is one of the most pressing concerns for parents, and must be addressed to encourage a modal shift towards walking and bicycling.

In 2006, Sorocaba city, São Paulo, Brazil created a bicycle plan to improve safety and higher quality of life for the city population by shortening the travel time between home and work or other kinds of trips. In April 2014 the city of 500,000 boasted 115 kilometers (71 miles) of bike lanes covering all areas of the city. The bike paths and bike lanes are connected and they are not segmented. The city also installed 110 bike racks to provide the modal connection with other transportation modes.

The city transportation department in Sorocaba also created a bike-sharing

program called INTEGRABIKE. Bicycle sharing programs employ a large fleet of bicycles that members of the public can rent for short periods of time from kiosks distributed throughout a community and deposit their bicycles at any other kiosk. Bike share programs have met with varying levels of success worldwide. INTEGRABIKE offers the bicycles for free and has 19 different stations and 152 bikes and is rapidly expanding.

Since constructing bike and implementing the bike sharing program the city of Sorocaba has observed a significant change in the traffic accidents scenario from 2001 to 2013:

- Total vehicular accidents fell by 75%;
- Accidents resulting in an injury fell by 60%
- Accidents not resulting in injuries fell by 80%

In spite of these impressive statistics, the number of accidents resulting in fatalities did not change significantly, remaining at about 1.1 fatal victims per 10,000 fleet vehicles.

As Safe Routes to School and bike sharing programs expand in cities the world over, they highlight the importance of providing diverse transportation options for community members, especially those who cannot drive: the young, the elderly, those with disabilities, and those who cannot afford car ownership.

3.2.3. Approaches to addressing walking and biking challenges:

Factors such as an area's socio-economics, the built environment, and personal preferences and attitudes can affect the amount of cycling and walking in a community.

Analysis of cycling facilities shows that cities with a greater supply of bike paths and lanes have higher bike commute levels. Furthermore, research on environmental factors associated with walking shows the aesthetic nature of the local environment, the convenience of facilities for walking (footpaths, trails), accessibility of places to walk to (shops and recreation and employment centers), and traffic volume on roads have all been found to be associated with walking for particular purposes.

Guo and Gandavarapu (2010) estimate that completing the sidewalk network in a typical U.S. town would increase average per capita active travel 16% (from 0.6 to 0.7 miles per day) and reduce automobile travel 5% (from 22.0 to 20.9 vehicle miles), or about 10 miles of reduced VMT for each mile of increased walking. Hence, addressing walking and bicycling challenges in the San Jose neighborhood begins with building new infrastructure specifically links that connects two otherwise isolated sidewalk networks, or provides a shortcut (such as connecting two cul de sacs), which is more or less nonexistent at present.

Implementation would require not only significant funding but also considerable coordination with other aspects of comprehensive planning such as land use, transit, and policy. Land use strategies would define access needs for an area – as an example, a grocery store or retail establishment would require pedestrian access. Similarly transit strategies define the bus routes which may in turn influence designing the walking and bicycling networks. In previous studies, such as performed by De Bourdeaudhuji, et al (2005), perceived environmental factors (neighborhood walkability, availability and quality of walking facilities) were found to be important for self-reported active transportation. Van Dyck et al. found out that a neighborhoods with higher perceived walkability have connected street networks, convenient recreation facilities, and to be safe from crime were positively related to cycling for transportation.

Therefore, the condition of existing infrastructure should be improved to increase the rate of walking and bicycling. These improvements might include sidewalk repair, removing obstacle from sidewalks, and preparing crosswalks. Another issue with existing infrastructure, as the community mentioned, is dis-connectivity of bike lanes. One possible solution would be to construct a dedicated bridge over the railroad.

Research in transportation, urban design, and planning has examined associations between the physical environment and individuals' walking and cycling for transport (Ewing and Cervero, 2010). They found out that walking is related to measures of land use diversity, intersection density, and the number of destinations within walking distance.

Intervention studies have usually addressed the individual or social environment, through incentives, individually-targeted behavior change programs, worksite programs, and walking clubs and other activities designed to increase social support for walking although some have targeted more changes in environment (e.g., building/extending walking paths). Walking occurs primarily on neighborhood streets and public facilities, and the character of such places influences the degree to which they are safe, comfortable, and attractive for walking (Saelens and Handy, 2008).

Cities around the world have been implementing a wide range of infrastructure, programs, and policies to encourage more cycling. Most American cities have focused on providing separate bicycling facilities such as off-street bike paths and on-street bike lanes. Research suggests that separate cycling facilities are

associated with higher cycling levels (Buehler and Pucher, 2012). Although some studies argue about the magnitude of infrastructure it takes to affect the rate of walking and cycling (Cao et al., 2009), there is evidence demonstrating that infrastructure encourages people to use active transportation modes (Dill and Carr, 2003).

3.2.4. Applicability to San Jose

There is also substantial evidence that environmental characteristics, whether assessed objectively or subjectively, are consistently related to physical activity (Saelens et al., 2003). Some research shows the effects of different elements on the rate of walking and bicycling, such as presence of bike lanes, connectivity of bike routes, and quality of walking and bicycling facilities. By using their outputs we might increase the rate of bicycling and walking in the San Jose neighborhood. This section evaluates various strategies by their applicability to the San Jose neighborhood.

Cycling is more popular among males, younger adults, transit users, and those who are physically active and in good health. Both perceived and objective environmental conditions contribute to the likelihood of cycling. Proximity to trails and the presence of agglomerations of offices, clinics/hospitals, and fast food restaurants, measured objectively, are significant environmental variables. Previously researched correlates of cycling, such as the presence of bicycle lanes, traffic speed and volume, slope, block size, and the presence of parks, are found insignificant when objectively measured (Moudon et al., 2005).

For both the elderly and the nonelderly, walking and cycling are discouraged in the United States by longer trip distances, the low cost and ease of auto ownership and use, and a range of other public policies that make walking and cycling inconvenient, unpleasant, and, above all, unsafe (Pucher and Dijkstra, 2003).

The impact of a street lighting program was assessed using attitudinal and behavioral measures, through before-and-after surveys of pedestrians. The results provide convincing evidence that sensitively deployed street lighting can lead to reductions in crime, fear of crime, and an increase in pedestrian street use after dark (Painter, 1996). A study in the area compared crime reports and the number of nighttime pedestrians before and after installing street lights. The report found that the prevalence of crime decreased by 26% in the study area and the number of nighttime pedestrians increased by 32%.

Safety presents another major concern for walking and bicycling, and falls into two general categories. The first issue has to do with human behavior such as criminal activity and reckless driving. The second type is environmental risks such as poor roadway infrastructure and unattended dogs. Despite the lack of clear causal connection between the safety of urban form and engagement in physical activity, proper planning should result in a design of the built environment that does not impede the propensity for walking and physical activity (Loukaitou-Sideris, 2006).

There are policy interventions to promote safe walking and bicycling, including targeted crime prevention initiatives, policies to facilitate the repair of broken windows, promoting neighborhood watch programs, lighting the way, addressing "bad neighbor" activity, creating safe territories, protecting access routes, and managing traffic in pedestrian areas. Managing traffic may involve reducing vehicular traffic volume, reducing traffic speed, and increasing education and outreach about pedestrian and cyclist safety for motorists, walkers, and bicyclists.

As discussed earlier, strategies such as bike sharing programs have been implemented successfully and have had some positive effects (Rabl and de Nazelle, 2012). The neighborhood should explore policies and initiatives such as this that, when implemented at the state or municipal level, would have direct positive benefits at the neighborhood scale.

3.3. Transit

3.3.1. Modes of Transit

Transit has been used widely for urban transportation and it contains several different types, which briefly are described here.

Municipal Bus

Buses are the most widely used form of mass transit in America due mainly to their cost effectiveness compared to that of other forms of public transportation such as light rail, commuter rail, and heavy rail systems (Tirachini and Hensher, 2010). Bus systems move people effectively while addressing issues of congestion and air quality due to high volumes of auto and truck traffic. Public transit can be more economical than vehicle ownership and less stressful than driving. It reduces the demand for parking and increasing roadway capacity and provides access and mobility those who do not have access to a car (City of Albuquerque, 2011).

Light Rail

Light rail is a mode of urban transport using fixed guideways often but not always in dedicated right of ways separated from other transportation. Unlike freight rail, light rail is designed to handle passengers rather than freight, and as a result can deliver high mobility to its users. The rail system can provide point-specific development options given the dedicated access for retail, residential, and business commuters. Light rail benefits from locating transit stops at high-density

points that concentrate travel destinations such as downtown centers or business centers within residential communities. Construction costs for light rail systems average about 35 million dollars per mile (Hensher, 2007). Combining light rail with new highway construction projects can achieve economies of scale with infrastructure improvement, further reducing the per-mile cost.

Because light rail is best suited for high density urban environments, costs of acquiring right of way for light rail vastly exceeds that of acquiring motor vehicle right of ways, especially as vehicular right of way acquisition often occurs in areas with lower densities.

In economic terms, "elasticity" refers to the resilience of a product's popularity to changes in price. A transit system with high elasticity is one in which ridership increases or decreases greatly as the cost of fares fluctuate, whereas low elasticity (or "inelasticity") refers to relatively stable ridership in the event of price changes.

Compared to other forms of transit, light rail has a relatively low elasticity: for every 1% increase in fares ridership decreases by about 0.33% (Linsalata and Pham, 1991). The specific elasticity of a system varies by city and region, but is largely dependent on the cost and availability of parking, though Erick Guerra states that regardless of the state of parking, few US cities have an elasticity below -0.25 (Guerra 2010). Plentiful and cheap parking lends itself toward a more elastic relationship between fare and ridership, while in contrast scarce, high-cost parking tends toward greater inelasticity. A light rail system, therefore, would achieve higher, more stable ridership when serving areas with scarce, expensive parking.

Commuter / Heavy Rail

Commuter and heavy rail differs from light rail in that these rail systems are high capacity, high-speed systems. Both commuter and heavy rail use the same gauge of tracks due to the availability of equipment for construction and maintenance of the infrastructure, and the flexibility of using the same rail infrastructure for both passengers and freight. Trains vary in size from three to twelve cars dependent upon route length, frequency and volume. Commuter rail best serves regional systems, which connect multiple municipalities; long distances between stops allow the trains to reach optimal speed for longer periods of time. The New Mexico Rail Runner, for example, connects communities from Santa Fe to Albuquerque and Belen.

Bus Rapid Transit

Bus Rapid Transit (BRT) emulates the look and feel of light rail while maintaining the flexibility of operating on any paved road. Most BRT systems provide dedicated lanes for buses to avoid conflict and delays associated with sharing right of way with other vehicles. Buses are often larger, articulated buses, which stop less frequently than local bus lines and run more frequently (Wright 2010). Other features associated with BRT include improved stations, off-vehicle fare collection, near-level boarding (which facilitates the boarding of persons with disabilities), peak headways of 15 minutes or less, and unique branding (Vincent 2010).

BRT infrastructure has increased in popularity in the United States due to its relative affordability compared to the initial capital expense of light rail (Currie, 2005). Both BRT and BRT-lite systems allow increased ridership and faster travel at a much lower cost than other systems.

Shared Ride Vans

Shared ride vans share features of both taxis and buses. While some municipal transit agencies offer shared ride services they generally fall under the purview of private companies. Shared ride vans may follow a fixed route, similar to a bus, but most often they have a target destination such as an airport. They pick up multiple riders before arriving at the destination. Spreading the cost of the transportation among multiple riders makes shared ride vans more economically attractive than taxis.

Informal Shared Ride/Transit

Ride share or carpooling is an informal means of travel whereby multiple people travel together in the same privately owned vehicle. A single person may own the vehicle, riders may take turns providing their own personal vehicles for the trips, or ownership (and the costs associated with it) may be shared among all riders. This arrangement is most commonly used for commuting to work but is also popular in rural areas for traveling to a shopping destination. Rideshare benefits the individuals by saving on gas, reducing vehicle expenses, and reducing parking fees. Rideshare benefits the community by reducing traffic congestion, decreasing overall travel time, emitting less pollution, and reducing demand on parking. Freeways in many major cities offer dedicated High Occupancy Vehicle (HOV) lanes to encourage carpooling as a faster means of travel than driving alone. Historically carpooling has occurred among groups of acquaintances, but technology is changing the way riders connect. The city of Albuquerque has a RideShare Program, which connects commuters through the city's web site. Ridester is an intercity rideshare pool for New Mexico. The website Craigs List has a forum for rideshare. Many smartphone apps have become available for users to connect to one another for rideshare.

Taxis

Taxis are privately owned vehicles that pick and drop off a single rider or small

group of riders at origins and destinations of the passengers' choosing. Taxis charge fees based on miles driven and/or time spent and may add various surcharges and taxes dependent upon the municipality they operate in and in compliance with state and local regulations. Taxis complement transit systems by operating beyond the access range of transit system and providing connections between existing transit services. Taxis can also provide mobility to non-drivers in low income areas under-served by transit systems.

3.3.2. Design of Public Transportation Systems

Transit agencies worldwide strive to achieve cost efficient and effective transit service. The Center for Urban Transportation Research at the University of South Florida emphasizes designing transit services around clearly defined principles, with continues evaluation of services around effective performance measures (Center for Urban Transportation Research, 2009).

Seven User Demands

Jarrett Walker, a transit consultant who has assisted public transportation agencies worldwide, has established a list of seven user demands that an effective transit service should strive to meet (Walker 2012):

- **"It takes me where I want to go."** Transit lines and stops exist where needed, conveying passengers from an origin to a destination.
- **"It takes me when I want to go."** The system operates at hours that are convenient and useful, with short "headways," or time between one bus and the next.
- **"It is a good use of my time."** Transit is a reasonable means of travel compared to other alternatives, and moves with reasonable speed and efficiency between an origin and a destination.
- **"It is a good use of my money."** Low fares make the system acceptable to low-income users and attractive to higher-income users
- **"It respects me in the level of safety, comfort, and amenity it provides."** Passengers feel safe and comfortable – the vehicles are neither dangerous nor overcrowded, and operators treat passengers with respect.
- **"I can trust it."** The route and its vehicles operate reliably and dependably, and the overall system is easy to understand.
- **"It gives me the freedom to change my plans."** The system provides convenient access to any destination needed, especially when plans change at the last minute.

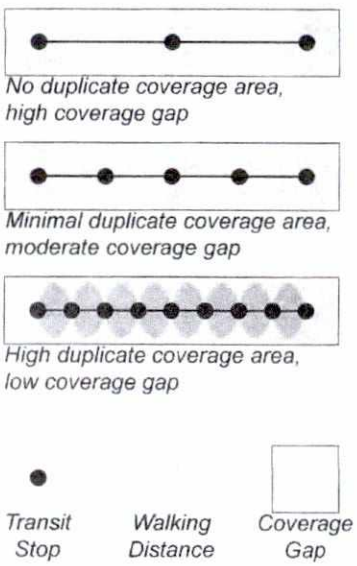

Figure 9. The tradeoff between coverage gap and duplicate coverage

> Public transportation is key to providing mobility to those without car; it grants access to employment, social interaction, and civic participation.

Dichotomies and Evaluation Factors

Transit systems and their users have limited resources – time, money, drivers and buses – and effective service requires allocating those resources wisely. In establishing goals for a transit system, it is important to acknowledge that most elements occur on a spectrum with tradeoffs at either end. For instance, an express service with fewer stops allows riders to move along the route more quickly, but greater distance between these stops results in fewer destinations accessible from the route and less access for potential riders.

It is important at this point to distinguish different types of transit users. "Captive" or "Transit-dependent" riders use public transportation because they have no other option; these are typically non-drivers, children, students, the elderly, or those with low incomes. "Choice" riders are those who have access to other modes of travel, but prefer to take transit for various reasons. "Recreational" riders are those who use transit intermittently, generally for special events or attractions; tourists, concertgoers, and sports fans fall into this category.

Two key goals to consider with any decision made in transit policy can often be mutually exclusive: ridership and coverage. Increasing ridership generally requires concentrating transit resources in major activity corridors to maximize the number of people who use the system (primarily choice riders); in Albuquerque, the routes along Central (#66, #766, and #777) have some of the highest ridership rates in the city (De Garmo, 2013). Coverage, on the other hand, refers to providing access to the greatest number of potential riders (especially the transit-dependent).

The directness of a route highlights the dichotomy between ridership and coverage. A linear, direct route along a major corridor is considerably fast, direct, and easy to comprehend, and thus may attract reasonable ridership. A circuitous route, in contrast, will take much more time to reach a desired destination, sacrificing ridership to serve a larger geographic area with fewer buses than several direct, linear lines would require.

As discussed before, the distance between stops greatly impacts both ridership and coverage. Each stop has a coverage area with a radius roughly equal to a potential rider's acceptable walking distance (typically about 1/4 mile). As stops grow further apart, the bus spends more time moving with traffic and less time stopping to load or unload passengers; the overall speed of the route increases and attracts the riders for whom this faster route is convenient. Such a move by necessity decreases coverage, as many people along the route are not within walking distance of a stop. Moving the stops much closer together provides much greater coverage, though at a cost. Not only does the bus move much more slowly, but the route suffers from "duplicate coverage area," whereby potential users are within walking distance of more than one route; this is a decrease in system efficiency that provides no benefit to those within the duplicate coverage areas.

Headway refers to the frequency with which buses arrive at a given stop. Longer headways equate to less convenience and flexibility for transit users, while shorter headways require significant expense for the transit agency.

Additionally, times of service impact the success of a transit line. Running the service early in the morning or late into the night greatly increases coverage, but these off-peak hours typically do not result in considerable ridership.

3.3.3. Public Transportation in Low-Income Neighborhoods

As quoted in a paper by Fan, Guthrie, and Levinson (2012), auto ownership declines with income. Only 70% of "poor" households own cars, compared to 92.7% of the overall population. Public transportation is key to providing mobility to those without car; it grants access to employment, social interaction, and civic participation. Fan et al identified a spatial mismatch between low-income families living in the urban core of the Minneapolis-Saint Paul region and the low-wage job clusters found throughout the region. They determined that the introduction of a light rail system greatly increased job accessibility for the working poor by as much as 53% (Ibid).

Evelyn Blumenberg and Michael Manville argue that the mere existence of public transportation does not negate the negative effects of spatial mismatch. They identify numerous barriers that public transit must overcome to best serve the working poor: not just long commutes and lengthy commute times, but the fact that public transportation provides easy access to far fewer employment opportunities than does a private vehicle. It is perhaps because of these barriers that for residents of public housing, transportation ranks second on a list of barriers to employment (Blumenberg and Manville, 2004).

3.4. Policy Options

3.4.1. Congestion pricing

Economically speaking, congestion is the result of a market failure. Driving on a congested roadway generates costs to the environment, the roadway, and other drivers, yet these costs are diluted among all roadway users; the marginal cost to a single driver is minimal compared to the benefits of using even a congested roadway.

Congestion pricing has been employed in a number of major metropolitan areas – including London, Stockholm, Singapore, and Milan – in order to manage traffic at peak hours by levying a fee on drivers entering a heavily traveled area of the city. Congestion pricing policies charge a nominal amount of money to drivers for use of a roadway, whether at certain times of day, in a specific area (such as a central business district), or predicated on other conditions. Congestion pricing policies monetize the cost of driving and internalize that cost to each individual driver. Anas and Lindsey explain that congestion pricing places more of the negative externalities that result directly from that person's actions on the driver, including air pollution, water polluted by road runoff, degradation of soil, and health issues related to breathing in fumes.

Congestion pricing policies attempt to induce changes in behavior, including how often people choose to travel, where and when they choose to go, and their likelihood of using public transit. In the long run, congestion pricing aims to influence development and land use patterns. Additionally, congestion pricing allows the driver to make a mental connection between driving and its effects.

Placing a direct cost on driving not only dissuades drivers from taking nonessential

trips during peak hours, it also generates revenue that can be used towards any number of purposes such as remediating environmental issues or improving alternative transportation infrastructure.

Anas and Lindsey's research shows that designing a pricing system that yields both congestion and environmental benefits can involve trade-offs (2011, p.82). Benefits such as reduced traffic delays, improved journey time reliability, reduced waiting time at bus stops, lower fuel consumption, less pollution and accidents and a more pleasant environment all have an economic value need to be set against the costs of operating and complying with the scheme to arrive at an assessment of the overall costs and benefits of congestion charging. Congestion charging schemes inevitably impact the geographical areas and economic sectors that they interface with such as driving down home prices and affecting local businesses, however it can also decentralize urban activities, which decreases the need for long travel distances.

Setting a price on all vehicle trips during peak hours in certain areas can help facilitate steady traffic flow, lessening overall emissions, but it must be done carefully. Peter and Gordon explain that if congestion pricing structures are imposed arbitrarily, resulting in a fee that is either too low or high, "a social optimum will not be reached" (2009, p.115). They point out that the other crucial piece of the equation is that the system's capacity must be sufficient to meet traffic demand.

One example of a successful congestion pricing strategy was implemented in central London in February 2003. It is operated on behalf of the urban authority, Ken Livingstone, by a transport agency called "Transport for London" (TFL) (Wetzel, n.d.). Drivers entering the charging zone were initially charged £5 a day to drive within the zone between 7:00 am and 6:00 pm between Mondays and Fridays. This was increased to £8 in 2005. Vehicles carrying goods pay the same daily charge as other vehicles with some exceptions, and there are special variances for licensed taxis, vehicles carrying disabled persons, emergency service vehicles, motorbikes, and alternatively-fuelled and electrically-powered vehicles that attain strict emission standards. The charge can be paid for one day, one week, one month or one year by telephone, mail, internet or at retail outlets. A network of 700 fixed and mobile cameras observe the license plates of vehicles entering or circulating within the charging zone. The surveillance system then checks these license numbers against its database of participants. If the vehicle driver is observed in the zone but is shown on the database as not having paid the charge by the next day, the driver receives a penalty charge of £50 to £150. Since the scheme was introduced, traffic volume entering the zone has fallen by 18%, delays are estimated to have been reduced by 30%, and there has been a broadly neutral impact on overall business performance in the zone (ITS LEEDS, 2010).

In the case of the San Jose Neighborhood, the lack of congestion on the roadways may dissuade the neighborhood from pursuing this option.

3.4.2. Vehicle Time Regulations

In several cities such as Barcelona and Dublin, successful experiences with trials on night delivery are made replacing a higher number of vehicles operating during daytime by a fewer number of vehicles operating during night time.

Within Barcelona, quiet night time deliveries were adopted in 2003. The Municipality introduced experimental traffic regulations. A night delivery trial was carried out concentrating the delivery processes between 11:00-12:00 at night and between 5:00 and 6:00 in the morning.

40 trucks were delivering to grocery stores directly during the night instead of going to a regional distribution center. The equipment used was noise adapted, both for the truck as well as the loading and unloading utilities. In addition, staff were trained to unload goods using a set of procedures aimed at minimizing verbal communication and other noise. The trial was successful not only in terms of noise intrusion but also from a commercial point of view; two large trucks replaced seven smaller trucks, reducing costs.

In 2013, these trucks delivered goods to about 20 locations in Barcelona and across the metropolitan area during the night-time. The positive reception from the public and the economic success of the program led to its rapid expansion to include approximately 140 supermarket outlets all over Spain (Forkert & Eichhorn, 2013).

In Dublin, a night delivery scheme for inner-city delivery was developed to relieve the Dublin inner city area from goods transport. The demonstration was successful and low-noise diesel vehicles and ancillaries were identified as a realistic option for night deliveries (Forkert & Eichhorn, 2013).

Night time deliveries have also been successfully implemented in other cities such as London, Rome, Vicenza, Torino and many other cities. In France, authorities strongly encourage this policy in cities such as Dijon, Paris, and Marseille, though other French cities such as Lille and Rennes ban night delivery due to noise pollution (Maroudas, 2011).

3.4.3. Peak Hour Operation

In 1997 São Paulo, Brazil, implemented the Peak Hour Operation, which restricted certain vehicles at specific times based on the last digit of the vehicle license plate.

For each weekday, certain vehicles are prohibited from driving in certain areas of the city between 7 and 10 in the morning and 5 and 8 at night.

The regulation was intended to reduce pollutant emissions, but it also decreased traffic volumes and increased instances of carpooling. Some wealthier people have circumvented the system by purchasing a second car, gaining access to a second license plate, but such a cost prohibitive measure is not widespread.

3.4.4. Vehicle Weight and Size Regulations

In Seoul, South Korea, all trucks over 2.5 tons were banned in 1979 from circulating within the central area during working hours to help relieve congestion. There are complex rules allowing some access on designated routes, but the general objective is to push truck arrivals and departures either to outlying areas or to schedule deliveries during the night when traffic volume is relatively light (Castro and Kuse, 2005).

3.4.5. Anti-idling

The idling of long-haul trucks has a tremendous negative impact on the environment and is responsible for consuming resources at an alarming rate. A study by the Edison Electric Institute calculates that 2,500 hours of idling - typical in a single year - burns 3,750 gallons of diesel fuel, adds the equivalent of 200,000 miles of wear to the engine, and increases annual operational costs by $4,000- 7,000 per vehicle (Tario, 2002, p.95). In 2002, the Argonne National Laboratory found that long-haul trucks idling overnight consume more than 838 million gallons (20 million barrels) of fuel annually – about as much fuel as the entire United States consumes in a day.

Beyond the direct cost of unnecessary diesel engine idling, there are substantial environmental impacts as well. According to the ANL Web site, an idling truck emits up to 22 tons of carbon dioxide (a greenhouse gas), over 1,000 pounds of nitrogen oxide, and nearly 400 pounds of carbon monoxide each year (Tario, 2002, p.95). Because of the harmful effects of idling, efforts to tighten anti-idling legislation in various parts of the country and to provide technologies that would lessen the need for idling have been explored. Available technologies to reduce idling include direct-fired cab heaters, onboard generators, auxiliary power units, and truck-stop electrification (Tario, 2002, p.96). These provide drivers access to electricity to meet their needs when stopped overnight without the need to keep their engines running.

Several states have enacted anti-idling legislation. The Massachusetts Anti-Idling Law aims to reduce unnecessary emissions from idling vehicles for more than five minutes in order to improve air quality. The Massachusetts General Law (MGL), Chapter 90, 16A prohibit unnecessary vehicle idling by stating that the engine must be shut down if the vehicle will be stopped for more than five minutes. Exemptions include: 1) the vehicle is being serviced and the idling is required to repair the vehicle; or 2) the vehicle is making deliveries and needs to keep its engine running (to power refrigerators, for example); and, 3) the vehicle's accessory equipment needs to be powered, such as a fork lift or a truck's rear dump bed, or a wheelchair lift in a bus or van. To provide additional protections for children, MGL Chapter 90, Section 16B further restricts unnecessary idling in school zones.

Other than the specific exemptions listed above and a few situations not listed in the law such as running the engine while actively clearing snow and ice off the vehicle and to warm the windshield and interior of the vehicle is necessary idling, all motor vehicles owners breaking the law can be subject to penalties that range from $100 (MGL Chapter 90, Section 16A) to as much as $25,000 (MGL Chapter 111, Section 142A). Local police have the authority to enforce the law, as do health officials or other officials with enforcement authority. Drivers and/ or companies can be held responsible for paying the fine. People can also report unnecessary idling to the local Board of Health, local police, DEP or the EPA.

3.4.6. Complete Streets Policy

Complete Streets are designed to accommodate all users, including bicyclists, pedestrians, cars and transit users. By adopting a Complete Streets policy communities direct their transportation planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation. This means that every transportation project should make the street network better and safer for drivers, transit users, pedestrians, and bicyclists, improving safety and quality of life (2014).

A true Complete Streets policy must apply to everyone traveling along the road. A sidewalk without curb ramps is useless to someone using a wheelchair. A street with an awkwardly placed public transportation stop without safe crossings is dangerous for riders. A fast-moving road with no safe space for cyclists will discourage those who depend on bicycles for transportation. A road with heavy freight traffic must be planned with those vehicles in mind. It may appear at first glance that roads are built to accommodate vehicles and their drivers, not pedestrians and bicyclists; however, the right-of-way is usually wider than the road itself and often encompasses the sidewalk, as well as any on-street bike facilities. While there are many examples in Albuquerque of poorly planned pedestrian, transit-rider, and bicyclist facilities (for instance, the many Albuquerque sidewalks obstructed by telephone poles and fire hydrants), cities that adopt complete streets policies fully develop multi- modal street facilities to provide multiple viable

transportation options.

Even small projects can be an opportunity to make meaningful improvements. In repaving projects, for example, an edge stripe can be shifted to create more room for cyclists. In routine work on traffic lights, the timing can be changed to better accommodate pedestrians walking at a slower speed. A strong Complete Streets policy will integrate Complete Streets planning into all types of projects, including new construction, reconstruction, rehabilitation, repair, and maintenance.

Complete Streets policies should result in the creation of a complete transportation network for all modes of travel. A network approach helps to balance the needs of all users. Instead of trying to make each street perfect for every traveler, communities can create an interwoven array of streets that emphasize different modes and provide quality accessibility for everyone. This can mean creating bicycle boulevards to speed along bicycle travel on certain low-traffic routes; dedicating more travel lanes to bus travel only; or pedestrianizing segments of routes that are already overflowing with people on foot. It is important to provide basic safe access for all users regardless of design strategy and networks should not require some users to take long detours.

An ideal Complete Streets policy:

- Includes a vision for how and why the community wants to complete its streets
- Specifies that 'all users' includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses and automobiles.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.
- Is adoptable by all agencies to cover all roads.
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs that Complete Streets solutions will complement the context of the community.
- Establishes performance standards with measurable outcomes.
- Includes specific next steps for implementation of the policy (Smart Growth America, n.d.)

The proposed Woodward Road extension of the Sunport Boulevard Project includes a complete street design, but the community has expressed the concern that with the two-lane street's potential expansion into four lanes, increased traffic flow would compromise the safety of bicyclists and pedestrians. Congestion on the road could also decrease the reliability of the #16/18 bus line, already plagued by a circuitous route and long headways. Although complete street designs promote transportation mode equity by accommodating more users, it is crucial to consider the context of each specific roadway. Designating Woodward Road as a complete street might necessitate trucks to take an alternate, designated route around the neighborhood. In order to be successful in this context, a complete street policy would have to be implemented with alternative truck routes in mind to avoid conflict with pedestrians and cyclists.

3.4.7. Design for Traffic Calming

Should funding be secured for the expansion of Woodward between Broadway and Second Street, the roadway will be widened from two to four lanes with bike lanes and sidewalks. The specifics of a roadway design often influence the speed of drivers regardless of the posted speed limit. This is because when roads are built with wide lanes and no perceived obstructions nearby, drivers feel that they can increase their speed with no safety ramifications.

In one study aimed at reducing driver speed on a specific road segment (Allpress and Leland Jr., 2009), traffic cones were placed in two configurations that decreased the lane width at the entrance to the segment. The first configuration decreased the lane width at equal cone intervals and the second used unevenly spaced cones. The study found that both configurations were highly effective but that the unevenly placed cones were even more effective than the evenly placed cones. This suggests that greater variability in roadway conditions results in drivers decreasing their speed to better react to changes in their surroundings.

In a traffic calming progress report of U.S. cities indicates a preference for road diets. Road diets typically reduce road lanes from four to three, reducing two travel lanes in either direction down to one lane in either direction with a shared turn lane. This allows traffic flow to continue while allowing for turning movements, with the benefit of also making easier for pedestrians to cross.

3.5. Alternative Fuels

Diversifying U.S. transportation fuels is a critical step in reducing our dependence on oil and mitigating the risk of petroleum price increases. Many alternative fuels exist on the market today, though their progress varies by market share, research and development, established infrastructure, and implementation. Figure 10 summarizes the potential benefits of each type of alternative fuel and vehicle.

Natural Gas	Bio-Diesel	Electric	Ethanol	Hydrogen	Propane	Solar
High potential	Potential is thwarted by public opinion	Hybrids show potential	High potential	Very high potential	High potential	Potential as supplemental technology
Additional investments needed in public infrastructure	Can be domestically produced, even by individuals	Initial Cost + Low Battery Life –> tough sell	Additional investments needed in public infrastructure	Behind the curve compared to other alternative fuels	Additional investments needed in public infrastructure	Problems with storage of power
Around for nearly 100 years	Conversion kits readily available	Need to reduce price or increase lifetime	Popular "fleet vehicles"	Difficulty in storing and producing leads to high cost		Not ready to be primary generator for vehicles
	Major public awareness campaign needed	Difficult to determine if actually reduces emissions		Needs more research $$ before can be used		
		More readily available fueling stations				

Figure 10. Potential benefits of various alternative fuels

To make serious inroads in the diversification of U.S. transportation fuels, it is best to begin with "low hanging fruit," i.e. invest in infrastructure for fuels successfully in use at this time (such as ethanol, propane, or natural gas). Hybrid vehicles show great potential for continued growth, and are currently in production by all major automobile manufacturers (Honda, Toyota, Ford, Chevrolet, etc.).

The following proposed policies encourage alternative fuel / vehicle use and development:

- Tax credits for implementation of bio-diesel and ethanol conversion kits;
- Financial incentives to convert existing railway and multi-modal facilities in the area to utilize alternative fuels;
- Increase available tax deductions available for processing biofuels;
- Tax credits for purchase of hybrid vehicles, used or new;
- Require all government vehicles to be alternative, bi-fuel, or hybrid vehicles; and
- Provide grants for producing alternative fuels in low-income industrial areas.

3.6. Freight

The freight transportation network is the backbone of the US economy, and vital to national prosperity and security. Every sector of the economy relies upon the safe, expedient, and reliable transportation of freight - and the free movement of goods is essential to economic health and competitiveness. Through the advancement of technology and communications, North American manufacturing and retail operators have evolved their logistic networks into complex chains of suppliers and receivers, all with their processes reliant on the "just in time" delivery of materials (Ortiz, et al., 2007) (Southworth, 2008).

In 2007, the US freight industry delivered 42 tons of freight worth $39,000 for every man, woman, and child in the United States (RITA, 2008). When accounting for the distance that freight must travel, an average of 11,000 ton-miles was delivered per person in the US. Population growth and expansion of the freight transportation networks are inextricably tied, but there exists direct competition for the same land and environmental resources - and conflicts often arise. Conflicts that impede freight are readily apparent, such as vertical clearance at bridges or inadequate road geometry. But other conflicts of freight activities, such as noise, vibration, and environmental effects, may not be immediately apparent.

The close proximity of freight operations to residential and community land use activities often creates nuisance, and safety and health concerns. From the perspective of freight interests, these conflicts can create barriers to efficiency and diminish economic performance. The key to preserving freight transport facilities and corridors is to prevent or resolve conflicts between freight operations and other land uses.

3.6.1. The National Freight Network

Population growth requires system investment

Existing volumes and anticipated increase in the number of freight vehicles, vessels, and other conveyances over both public and private infrastructure are stressing system capacity, increasing maintenance requirements, and threatening system performance (OFMO, 2009).

Trucking

More than 80% of all US communities rely solely upon trucking for the delivery of their goods and commodities; and save for a few small islands and remote areas of Alaska, it is the only mode that provides direct service to all US communities. In 2008, trucks moved nearly 70% of all domestic cargo, totaling 10.8 billion tons (ATA, 2009).

> Eighty percent of trucking companies own six trucks or fewer, making for a complex web of working relationships and hyper-competition among carriers

Rail

The freight rail sector is strong and currently meets the nation's demands for rail service. Four major private companies move over 85% of all rail freight in the US. Norfolk Southern and CSX Railroads operate east of the Mississippi River while Union Pacific and Burlington Northern/Santa Fe (BNSF) dominate the west. Future capacity expansion is difficult due to the high cost of infrastructure, environmental impacts on adjacent lands, and acquiring new right of way. The rapid expansion of intermodal operations and the growth of import/export traffic at US seaports are providing both challenges and opportunities in this sector.

Several governmental organizations oversee various aspects of freight rail operations, but the Surface Transportation Board (STB) provides the forum for resolution of surface-transportation disputes and other matters within its jurisdiction, and has the authority to limit or remove regulatory requirements where appropriate.

Air

Passenger air continues to recover from the several events of the last decade

Since 1970, the air cargo market has doubled in volume every ten years (FHWA, 2008), and is expected to continue to grow at an annual rate of 6.5% over the next two decades. Airborne freight totaled 13 million tons in 2008, and industry forecasters expect more than 61 million tons of cargo to be transported by air in the year 2035

Pipeline

The pipeline sector is healthy; industry analysts anticipate continued expansion as the US demand for petroleum increases. In contrast to other means of moving bulk petroleum, natural gas, and chemicals, pipelines offer a safe and cheap method of transportation with minimal impact on the environment.

Intermodalism

Generally, Intermodalism is the transition of freight from one mode to another, and usually requires special terminal facilities, equipment, and operations. Transportation planning and policy has traditionally focused on individual modes: automobiles, trucks, rail, transit, airplanes, ships, etc. Intermodal facilities take many shapes and sizes, usually deep water ports transition freight from ship to rail and/or truck. Inland intermodal facilities routinely transition between rail and truck.

While there are tradeoffs of costs and benefits between modes, it is generally considered best practice to haul freight by rail for distances greater than 500 miles, with longer distances recognizing better savings of cost and infrastructure wear and tear (Abbassi, 1996)

3.6.2. Challenges to Freight Sustainability

Freight transportation is complex and heterogeneous, meaning it is extremely difficult to identify common features between the requirements of different users and operators. There is very little commonality between, for example, the nature of trips and the unique requirements of cement trucks, post office vehicles, tractor trailers, dump trucks, courier vans, emergency vehicles, garbage trucks, or parcel delivery vehicles. Further, there is little shared in the specific characteristics of delivering goods between warehouses, factories, stores, homes, terminals, construction sites, at the roadside or port facilities. All of these variations identify that there are numerous "actors" in the urban freight scene, each with their unique business requirements, motivations, and available options; and therefore exists a multitude of perceptions of "the problem" (Ogden, 1992).

From the motorist perspective, trucks and trains are a nuisance and hindrance on the roadway, and the driver looking for a downtown parking spot resents all the space dedicated to loading zones. The retailer appreciates the freight deliveries, but regrets that the loading zone takes valuable parking space for potential customers. On the other hand, truckers may view the automobile as a menace as

they travel too slowly or make erratic lane changes, and trucking companies see automobiles as the cause of highway congestion and delay – driving up operating costs. Urban resident want to keep trucks off their streets, while traffic engineers and urban planners are concerned about pavement condition, and providing adequate intersection controls and road space for maneuvering and loading (Ogden, 1992). While these are simplistic illustrations of various definitions of "the problem," it may be easiest to explain "the problem" as conflict that arises from incompatible land uses within close proximity of another. With competing land uses there exists the likelihood of interference with each other (Leigh, 2012).

3.6.3. Land Use Conflicts

Freight operations create conditions that are incompatible with residential, educational, or health care activities. Community concerns surrounding freight facilities include noise and vibration effects, light pollution, air and water quality, safety, and traffic congestion (Simons, 2004). Some conflicts, such as noise, are present in all freight modes, but the potential for more dangerous conditions can be mode-specific. For instance, the potential for dangerous trespass is especially specific to railroads. Figure 11 identifies various land uses and major conflicts that arise adjacent to, industrial yard, and rail activities. These impacts are discussed in more detail in the following paragraphs, and specifically highlight the issues of incompatibility between freight operations and neighborhood communities with dwelling units, educational and recreational activities, and health care facilities.

3.6.4. Pollution and Air Quality

Since the days of horse-drawn wagons and canal ferries, pollution surrounding freight movement has been a public nuisance. Diesel engines are the work horse of modern freight haulage, and are commonplace in train locomotives,

> Freight operations create conditions that are incompatible with residential, educational, or health care activities. Community concerns surrounding freight facilities include noise and vibration effects, light pollution, air and water quality, safety, and traffic congestion

Issue	Description	Truck Activity	Rail Operations
Noise Sensitivity	Housing (residential, motels, etc.); educational uses (childcare, schools); playgrounds; libraries; hospitals and residential health care providers.	X	X
Light Sensitivity	Housing (residential, motels, etc.); hospitals and residential health care providers.	X	X
Vibration Sensitivity	Housing; educational uses; vibration sensitive industries (such as precision high-tech); all buildings not constructed to withstand fatigue caused by excessive vibration.	X	X
Pollution & Air Quality	Housing; educational uses; hospitals and health care; recreational uses.	X	X
Potentially Incompatible with At-Grade Crossings	Housing units; educational uses; libraries; hospitals and health care providers; commercial uses; emergency services		X
Potential for Dangerous Trespass	Housing units; educational uses (especially childcare facilities and schools); libraries; playgrounds; commercial uses		X
Traffic and Congestion Sensitivity	Highway and Roadway Designs; aging infrastructure; capacity	X	X
Time Sensitivity	Night-time sensitive uses	X	X

Figure 11. Land uses and conflicts adjacent to freight activities
Source: (Leigh, 2012), (Larson, 2013), TRB of the National Academies, 2011

tractor trailers, drayage vehicles, and trucks of all sizes. Transportation is among the largest contributors to poor air quality and pollution, with tailpipe emissions the source of diesel particulate matter (DPM), greenhouse gases, and other harmful substances. It has been well documented that areas having freight traffic experience poor air quality, higher concentrations of DPM, NOx, and ground level ozone. Health effects of prolonged exposure to high levels of DPM include increased incidents of asthma, and 70% increase in cancer risk (Karner, et al,

2009).

3.6.5. Safety

As stated in the Land Use conflicts section, safety is of particular concern, and the causes for concern are often mode-specific. Squatting and trespass are a concern for railroad operators, and is particularly common in Albuquerque. Rail trespassing and crossing is extremely dangerous, and Figure 12 provides count data for train-related casualties in New Mexico. The railroad generally needs to take measures such as fencing to keep people off the tracks, and appropriate mitigation of hazards at the highway-rail grade crossing measures to reduce these fatalities, but further public education and outreach efforts are also needed.

Road design contributes greatly to trucking safety, with proper planning required to provide adequate turning requirements and dimensions. From the Manual on Uniform Traffic Control Devices (MUTCD), specific signage shall be used to indicate a designated truck route. Residential areas generally have narrow streets and inadequate geometry to accommodate heavy trucks. Roads designed for trucks are wide, and encourage all traffic to travel faster, making them a safety concern for residential and school-age activities. Curb radius is a key design element to keep trucks within the lane; improper radii may result in trucks mounting curbs and sidewalks. Poor road design could also lead to the potential for truck and bicycle conflicts. Freight considerations must enter the design of new intersections, especially as they relate to the San Jose Neighborhood and the Sunport Boulevard Extension Project.

3.6.6. Noise

Freight Noise is of serious annoyance, and characterized by three levels of disturbance: psychological, functional, and physiological disturbances. Noise interferes with sleep, degrading the quality of life within a homestead. It is common practice for trains to blow their horns before reaching a rail-crossing; these horns are required safety measures but also a serious nuisance for neighborhoods, educational and health care activities. Low frequency noise and vibrations are just as troublesome. There are noise levels otherwise called "equivalent sound pressure levels" that effectively amplify the level of noise. A typical train horn is 120dB, compared to the general sound levels of daytime industrial activity of usually around 75dB. The city of Albuquerque, New Mexico has enacted a sound ordinance limiting trucking noise to 88dB for daytime hours and 80dB during nighttime (City of Albuquerque, 2009).

3.6.7. Lack of Freight Considerations in Transportation Planning

There is a severe shortage of understanding and research into urban freight transportation, and the reasons are varied. First, most planning activities focus on congestion, and emphasizes passenger cars since they comprise a bulk of the traffic. Furthermore, a lack of political interest has prevented freight planning and research from keeping pace with research in related fields given its critical importance to society.

This lack of understanding has allowed the burden of freight to weigh on the infrastructure unchecked for several decades. Conceptually, traffic planning involves forecasting future travel demands, and then a portion of those trips are estimated to be freight trips. This overly simplistic approach neglects the operating characteristics of freight and delivery vehicles, the unique travel patterns, the repeated stops for loading and unloading, and other impacts they have on the transport network (Woudsma, 2001). Furthermore, inaccurate forecasting of trips related to freight transport provides erroneous calculations for future air quality, network levels of service, and infrastructure physical conditions. Currently, numerous larger Metropolitan Planning Organizations (MPO) already have extensive freight management planning, incorporate a freight committee or planning task force, and make conscious effort to optimize freight operations within their overall objectives. Unfortunately, these freight optimization efforts are often conducted

New Mexico	Fatalities					Nonfatal					5 year Total	
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	Fatal	Non Fatal
Total Casualties	16	12	15	12	10	63	60	52	76	61	65	312
Rail Crossings	7	1	3	4	1	7	4	5	10	2	16	28

Figure 12. Train casualties for the State of New Mexico

Source: (FRA, 2011) Railroad Safety Statistics 2011 Preliminary Annual Report

in a vacuum, often absent from any social equity or environmental justice efforts. Planning agencies are making progress, but need to improve the process of early community engagement and stakeholder buy-in.

3.6.8. Current Movement in Freight Sustainability

Urban freight policy should be an integral part of urban transportation and economic development policy. While most MPOs spend less than 5% of their time and project funding on freight-related projects (Schank, 2008), the recent US Federal mandate for freight considerations in planning, research, and policy has finally provided validity to the issues affecting countless communities and planning organizations.

Any significant changes to land use policy or freight transportation strategy will need to be developed at, or at least endorsed by, the local planning agencies and the MPO – in Albuquerque, the city and county governments and the Mid-Region Council of Governments. Evolving practices in regional planning have taken more notice of equity issues, environmental justice, externalities of freight transport, and calculating the true costs of land use and infrastructure decisions. Often, the discussions originate from impacted communities, activist groups, or public reaction to issues with safety and equity. The bottom line is that effective freight planning requires agencies adopt policies to seek public input early and often in the project planning process.

3.6.9. Freight Transportation Strategy and Tactics

Freight-transport tactics that transportation decision makers might consider range from engineering controls to development of freight and land use policy. There is no "one size fits all" solution, and every situation requires its own analysis and consideration of costs and benefits. Transportation planners have the responsibility to provide and protect freight corridors, at the same time try to preserve the quality of life for communities and other land owners. Several tactics are available, and all fall into four main implementation strategies:

1. Long Range Planning,
2. Zoning and Design,
3. Mitigation, and
4. Education and Outreach.

Each strategy has a unique approach to serving the same objectives of developing land uses and minimize conflict. Various tactics are provided, along with their tradeoff and suggested measures of effectiveness.

3.6.10. Truck Restrictions and Road User Agreements

Truck restrictions, and the development of truck routes, have been successful at improving safety and removing nuisance on several projects. It has been demonstrated, such as in the case of Barrio Logan of San Diego, California, that the total prohibition of heavy trucks through a community, and the establishment of designated trucking routes as part of a holistic policy strategy, can dramatically reduce the truck traffic VMT and subsequent DPM in the immediate area (Karner, et al, 2009).

Several states have introduced the concept of a Road Use Agreement (RUA) for contractor, developer, and operator accountability on public roads. Essentially, a RUA is a contract between the interests of a municipality, or a large group of private land owners, and a commercial entity that has potential to impact the public network. The RUA can be written to limit any number of trucking activities within a specific area, such as oversize and overweight restrictions, time of day usage, excessive noise, anti-idling, etc. The regulated permit could then be managed and assessed under the conditions of the agreement for violations, excessive damages and needed repairs. The RUA approach eliminates the need for local law and associated enforcement, but is limited as a strategy because it only focuses on mutually amicable and voluntary agreements with large contractors and developers (Herrick, et al, 2011).

3.6.11. Truck Route and Facility Design

Appropriate road design can have tremendous influence on preferred truck routes of travel. Just as narrow turn radii and low overhead clearance discourages truck travel along a route, the implementation of favorable conditions can encourage truck travel on a route. The location and siting of freight facilities, such as warehouses, intermodal terminals, and highway interchanges, warehouses, is almost nearly always predetermined. Rarely does one get to design a new terminal in the middle of undeveloped land, but rather engineers and planners must find ways to mitigate existing conflicts between proximal incompatible land uses.

Relocation of freight activities or entire neighborhoods is a costly and often impossible option, but the development of preferred truck routes and freight corridors can alleviate truck traffic through neighborhoods by offering an easier route for trucks to navigate. The establishment of well-marked trucking routes, and penalties for trucks deviating from the assigned routes, has been shown to be effective at reducing undesired truck travel through communities when there is adequate public awareness and enforcement (NYCDOT, 2006). The creation of truck routes around a community, with attention given to providing improved entry/exit ramps and adequate merges, and improved capacity and safety for trucks

would channelize all local freight movements to that route, but could also have the unintended effect of inducing more freight traffic.

3.6.12. Fleet Management Technologies

The latest technology in fleet management involves the real-time tracking and live dispatch from a centralized command center. In trucking and freight rail, fleets are now tracked using Global Positioning Systems, while software provides tracking of commodity flows, delivery schedules, network interruptions, and provide automated alerts and redirection of fleet assets. The ability for real-time feedback and redirection allows freight companies to operate their fleet at optimal efficiency, reduce wasted fuel (and emissions), avoid delays, and schedule maintenance and repair to ensure peak equipment performance (Ogden, 1992).

3.6.13. Shipper/Receiver Actions

Trucks and trains operate at the needs and desires of their customers, shippers and receivers. Whether voluntary or mandated, the implementation of off-peak freight shipping and receiving hours can have dramatic influence on the impact of freight traffic. Similar to other tactics, off-peak operations require businesses and/or government to recognize the value and then put into practice. While freight operations are inevitable, the shippers and receivers have the ability to influence the times of their freight releases. Policies that encourage off-peak loading dock operations have been shown to mitigate peak hour congestion, and even a 5% decrease in rush hour traffic can provide noteworthy improvement in traffic operations (Allen, et al, 2012).

3.6.14. Emissions Control Policies

Considerable air quality improvement can be realized through the implementation of various policies to regulate emissions and reduce or eliminate engine idling. Typical diesel equipment inventory at rail yards and freight terminals is antiquated and heavily polluting (Karner, et al, 2009). Older equipment such as switching locomotives, drayage trucks, cranes, and forklifts does not meet current federal air quality requirements for new diesel engines, and are heavy contributors to poor air quality. Numerous states have enacted clean air standards, emissions requirements for commercial vehicles, and created clean air corridors for agricultural, industrial and commercial districts. These forward-thinking states have patterned their clean air policies after federal regulations, and have already recognized reductions in GHG emissions, NOx and DPM levels.

3.7. Land Use

Effective policy, planning, and land-use strategies over time can lead to sustainable development, defined by Hopwood et al. (2005) as development that attempts to address issues of ecology and socio-economic justice (38). The concepts behind

sustainable development arise from a growing awareness of economic and social externalities.

Mixed land-use development and compact development, which respectively are aimed at increasing land-use diversity and density in an area, are two widely used strategies categorized as land-use strategies. Another land-use strategy, infill development, might also be used to increase density and diversity by using open space and undeveloped land in a more productive way. Planners advocate land-use strategies for many reasons, including land and habitat preservation, efficient public service provision, aesthetics, physical activity, vehicle mile traveled (VMT) reduction, and the creation and preservation of urban culture (Schweitzer and Zhou 2010). Among these, one of the greatest desirable benefits of effective land use is a reduction in VMT, which results in a cascade of other positive outcomes.

One important outcome associated with VMT reduction is a significant decrease in pollutants, particularly Nitrous Oxides (NOx) and Particulate Matter (PM) emissions (Henderson and Mokhtarian, 2010). Additionally, those land use policies which tend to result in VMT reduction also tend to lead to an increase in the share of active modes of transportation such as walking and cycling. Increased physical activity due to walking and cycling provides substantial health benefits (Frank et al. 2006) which lead to increase in welfare and happiness. Reductions in driving costs and improvements in health also contribute to significant economic benefits (Giles-Corti et al, 2010).

> Sustainable development can achieve VMT reduction due to combination of decrease in travel distances, and providing opportunities to use alternative means of travel, such as walking and biking, to reach trip attraction centers like schools and grocery stores

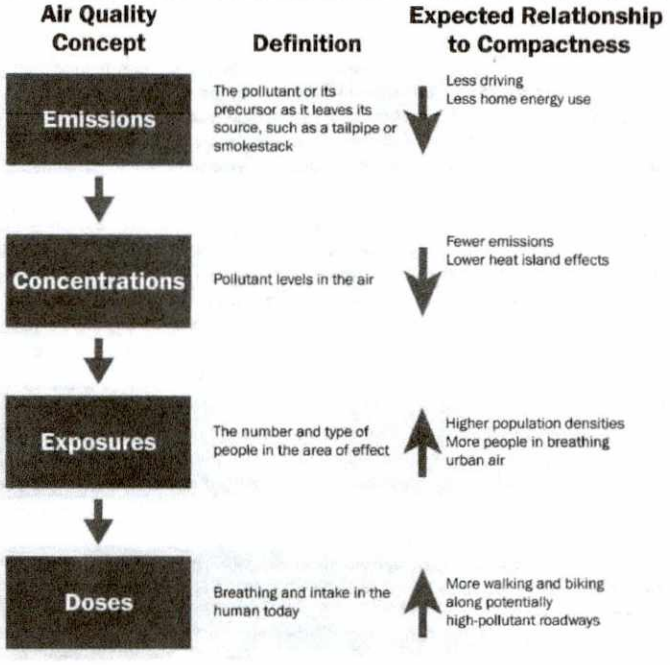

Figure 13. Effect of compactness on air quality

Sustainable development can achieve VMT reduction due to combination of decrease in travel distances, and providing opportunities to use alternative means of travel, such as walking and biking, to reach trip attraction centers like schools and grocery stores. McNally and Ryan (1993) studied two different hypothetical transportation networks, one representing a conventional community, the other a "neo-traditional" one, and modeled their travel characteristics. The authors concluded that longer trips and greater congestion resulted from the conventional design.

Ewing et al. (1994) analyzed trip records obtained from six Palm Beach, Florida communities exhibiting a variety of land use configurations for differences in trip frequency, mode choice, trip chaining, trip length, and overall vehicular travel. The sprawling community generated almost two-thirds more vehicle hours of travel per person than the "conventional city" community, with the others falling in between these two endpoints. The authors observed that an increase in density, a mix of uses, and a central location precipitate a reduction in vehicle travel (60).

A study of two neighborhoods in the City of Portsmouth, New Hampshire (White Mountain Survey Company, 1991) found that for a neighborhood with mixed land-use, trip generation rates were considerably lower than the general averages contained in the ITE Trip Generation Handbook. Further, it appeared that a higher proportion of the trips that were generated remained internal to the study area than would normally be the case.

The reduction in single occupant vehicle travel was found to be as significantly associated with the increase in population density as it was with employment density.

Frank & Pivo (1999) analyzed travel behavior in terms of mode choice using data on household travel behavior and demographics (control variables) from the Puget Sound Transportation Panel (PSTP). The findings presented in the paper indicate that the relationship between mode choice and land-use mix can be measured, though the relationships are relatively weak. Transit usage and walking increase as density and land-use mix increase, whereas single occupancy vehicle usage declines. Walking trips were found to be most responsive to increasing density. Their findings suggests that the population density need to exceed 13 residents per acre for the changes in mode choice to be significant. As a point of comparison, San Jose Neighborhood has a density of approximately 1.8 persons per acre (US Census Bureau, 2011). The reduction in single occupant vehicle travel was found to be as significantly associated with the increase in population density as it was with employment density.

Ewing and Cervero (2010) conducted a meta-analysis study to investigate the effect of several variables on VMT. The research found a significant relationship between density, diversity, design, destination accessibility and distance to transit in an urban area and VMT Increase in population and job density, increase in mix of land uses, decrease in intersection density, increase in access to the job within one mile and decrease in distance to nearest transit stop were all found to decrease VMT either through increase in walking or increase in transit ridership (See Figure 14).

Graham (2007) analyzed the effect of mixed land-use on productivity. They showed diversity of land use is strongly related to an increase in business/commuting/leisure time savings, in terms of welfare which lead to an increase in total productivity.

Lower VMT and subsequently lower emissions achieved from land-use changes have also led planners to treat land-use strategies as a means to combat respiratory health problems associated with poor urban air quality. However, compact development, particularly when it is achieved through infill, is not necessarily a good strategy for public health in all cases, because even though regional concentrations and emissions may decline, residential exposure in urban areas may increase (Hixson et al. 2010; Schweitzer and Zhou 2010).

The studies on compact development and exposure, however, generally find that exposure and human inhalation of pollutants are higher in compact cities because there are more people in urban neighborhoods, and more people are outside at street level walking, biking, and sitting. Marshall et al. (2005) found that, in general, density's net effect on health was negative, as the marginal emissions reductions caused by an increase in density had less effect than the marginal additions the same increase produced

Variable (strategy)	Percent change in VMT due to percent change in the variable
Household/population density	-0.04
Land use mix	-0.09
Jobs-housing balance	-0.02
Intersection/street density	-0.12
% of 4-way intersections	-0.12
Job accessibility by auto	-0.2
Job accessibility by transit	-0.05
Decrease in distance to nearest transit stop	-0.05

Figure 14. Correlations between land-use strategies and VMT
Source: Cervero and Ewing, 2010

in human intake of emissions. But they argued that the outcomes might be different with greater transit patronage. A micro-simulation study found that while pedestrian-friendly environments increased physical activity, they also significantly increased human exposure to particulates (de Nazelle, Rodríguez, & Crawford-Brown, 2009). Figure 13 shows how four different air quality concepts change as compactness increases.

Another problem of unplanned urban development that may illustrate the situation of San Jose neighborhood quite well is the interference of industrial and residential land-uses. Hence, the separation of urban spaces for reducing environmental damage and increasing the citizens comfort through intervention in urban policies is essential. A study of residential and industrial compatibility near Tehran Metropolis by Taleshi and Bishehii (2012) studied a situation very similar to that which the San Jose community is facing at this time. Beyond major industries and residential areas, in some regions, the land use is mixed with industrial and residential due to the lack of logical planning and urban design. The authors' strategy for zoning is to separate heavy traffic from residential uses; the preservation and restoration of green spaces and gardens and the combination of both residential and industrial use in a limited and low-density way. They recommend attracting those industries with lower ecological footprints.

As Berke et al. (1993) discussed, land-use strategies are long term strategies. They cannot be expected to mitigate transportation related problems in short term. Implementing these strategies may take decades and might introduce new sources of externalities in the short term because of the need for costly re-development. Once implemented, though, they can boost the quality of life in the neighborhood in a significant way.

> Rather than driving out either the residents or the industries, the neighborhood should seek to create buffer zones between both types of zones in order to minimize conflicts

Figure 15. Developable land on Broadway Boulevard

Implementing land-use strategies focused on increasing density frequently receives criticism from affected residents, often predicated on the misconception that higher density results in an increase in property prices, crime, and obstructed views. As Alexander and Tomalty (2002) argued, high housing costs are a reflection of the desirability of denser, more diverse settings and the willingness of people to pay to live in them rather than a direct result of increased density. They recommend creating an affordable housing reserve fund, waiving development fees on affordable housing projects, offering city-owned lands at below market prices for residential development and allowing extra density for creating affordable units and encouraging senior governments to reassume their commitment to supporting the creation of affordable housing. Figure 14 shows correlations between different land-use strategies and their influence on VMT.

Many of these strategies might be applicable in San Jose neighborhood. Several sites throughout the area would be appropriate for attracting new mixed-use development. Any effort to develop underutilized property must consider transit. As Ewing and Cervero (2010) showed, as distance to nearest transit stop decreases by one percent, VMT decreases by 5 percent. Broadway Boulevard (Figure 15) might be a justifiable location for mixed and compact development since it already has access to transit. There are other empty lands which might also be considered for new compact and mixed development if they could be provided with the access to transit (Figure 16).

Infill development strategies are also applicable in the neighborhood. Not only the neighborhood is full of unutilized and empty land but also there are many parking spaces around Broadway Boulevard which can be used in a more productive way to increase density and diversity. Since mixed development would be appropriate adjacent to Broadway Boulevard, it is also worth considering utilizing empty land and reclaiming on-street parking spaces for other uses.

Shopping trips account for a significant amount of trips made in cities with sprawling development. Providing residents with retail outlets and grocery stores decreases their need to travel long distances by car or bus. Commercial development should anticipate and encourage residents to walk, bike, or bus to their shopping destinations, and therefore should adopt urban design guidelines, replacing an ocean of parking lots with storefronts that define the edge of the roadway. Figure 16 shows some examples of urban stores ideal for a compact, mixed use development.

Existing industrial activity in the neighborhood results in noise, hazardous

materials in manufacturing processes, and heavy vehicle traffic, all incompatible with nearby residential uses. However, these industrial land uses provide employment opportunities for residents of San Jose and contributes to the economic vitality of Albuquerque. Perhaps rather than driving out either the residents or the industries, the neighborhood should seek to create buffer zones between both types of zones in order to minimize conflicts. General planning practice recommends industrial/residential buffers of about 100 to 300 ft.

A study by Schweitzer and Zhou (2010) showed that neighborhood ozone levels are lower in more compact regions than in sprawled regions, but racial and class minorities still have higher neighborhood exposures for ozone in both types of regions. Their analysis suggested that fine particulate concentrations are not significantly lower in compact regions, and fine particulate exposures are worse, particularly for impoverished seniors and children, in compact regions. As the authors mentioned, in spite of growing awareness of environmental justice concerns and countless air quality improvement projects, air quality in communities of color and low-income neighborhoods is still a major concern (369). All land-use strategies must be analyzed with justifiable quantitative methods to investigate their impact on emission and exposure.

Figure 16. Mixed use development concepts
Top image, "Walmart Neighborhood Market" by Eric Allix Rogers. Lower image, "Columbia Heights Urban Planning Solution" by Timothy Vollmer. Both images used with permission via Creative Commons license. See List of Figures for attribution.

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4. Implementation

Recommended strategies for improving the quality of life in the San Jose Neighborhood

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Changing or guiding the development of land-use and transportation systems requires a strategic approach that has a clear, unified vision. In order to realize this vision it is necessary to understand the complexity of the public decision-making process and to apply the appropriate influence at the proper time and venue. These basic strategies are tools - available individually or in combination to achieve the goals of compatible land use and development. They fall into the following four categories:

1. Long-Range Planning
2. Zoning and Design
3. Mitigation
4. Education and Outreach

This section provides recommendations for the San Jose neighborhood of Albuquerque, New Mexico, in shaping the future of their neighborhood and engaging in the land use decision-making process. All of the tools identified can be employed by different stakeholders (e.g., various levels of government and planning agencies, community interests, task forces, freight groups, developers) as they identify, deliberate upon, and in some-cases, resolve conflicts that arise from proximate incompatible land uses.

Figure 17 lists some of the specific transportation planning and land use development tools under the four major strategies that can be used to achieve better compatibility in transportation and land use development. Figure 9 is not an exhaustive list that covers every possible scenario, but provides examples of tools, policies and strategies that have shown effective in certain contexts.

Long-Range Planning	Zoning and Design	Mitigation	Education and Outreach
State Enabling Acts	Zoning Standards	Buffer Areas	Informal Negotiations
Regional Visioning	Buffer Areas	Noise and Vibration Treatment	Public Involvement
Comprehensive Plans	Overlay Districts	Track Treatment	Multi-Jurisdictional Agreements
Land Use and Transportation Inventories	Lot Orientation	Yard Realignment	Public Outreach and Education Campaigns
Official Maps	Property Design	Grade Crossing Management	Stakeholder Roundtables and Freight/Community Committees
Environmental Policy Development	Construction Standards	Environmental Measures	
Permit Development	Sound Proofing Standards	Zoning Measures	
Land Swaps		Public Outreach and Education	
Protective Condemnation Access Rights		Relocation	

Figure 17. Implementation strategies for influencing land use decision-making

4.1. Creation of a Community Planning and Action Group

San Jose is among the oldest and most culturally-rich neighborhoods of Albuquerque, with real estate holdings in the middle of a light industrial corridor. A committee comprised of residents and property owners should be established to identify the community's transportation and land use planning issues, to represent the community to the city, county, and planning agencies. The committee should serve several functions, among them:

- Create and promote a "Neighborhood Vision."
- Collect community concerns and ideas in land use and transportation.
- Collaborate with the city, county, and MPO in planning workshops, outreach efforts, and public hearings.
- Provide feedback to the community, and education, on public planning processes, available options, timelines, and related tradeoffs.

In San Diego, California, the neighborhood Barrio Logan faced a similar situation where proposed transportation changes to improve Cargo Port access created unacceptable impacts to the residential neighborhood (Karner et al, 2009). The barrio worked closely with industry stakeholders and local transportation planners to form a partnership that documented and responded to residents' concerns. The committee successfully acquired a $250,000 grant from the state transportation

department – community planning requires resources in order to be effective. It is recommended the committee seek start-up and recurring funding through the Albuquerque City Council (represented by Councilman Isaac Benton) and/or discretionary funding from the Bernalillo County Commission (represented by Commissioner Maggie Hart Stebbins), as well as seeking out federal sources (MainStreet funding, Community Development Block Grants) and applicable non-governmental development grants (MacArthur, Kresge, WalMart, Sam's Club Community Grant program, etc.).

4.2. Establish Truck Routes and Weight Restrictions

With the exception of the Big Bear Petroleum - Honstein Oil activity on Commercial Street, heavy trucks have no need to enter or travel through the San Jose Neighborhood. If the community employs a weight restriction on the residential streets, it would effectively limit heavy vehicles to clearly established truck routes outside the perimeter of the neighborhood. The truck routes would circumnavigate the community on Bridge Boulevard-Avenida Cesar Chavez, Broadway Boulevard, Woodward Road, and 2nd Street. Trucks would be explicitly prohibited from Williams Street and all other cross-streets from Stadium Boulevard to Bethel Avenue.

This strategy would require some significant action with regard to Commercial Street industrial activity. Clearly, there is a considerable conflict between residential/educational activities and the petroleum/fueling activities on Commercial Street, but Big Bear Petroleum has a right to access as long asit remains onsite. Possible remedies for this conflict could include land swap negotiations to relocate the company out of the neighborhood, road realignment to provide an alternate access route, or tightly-permitted access through Anderson and Thaxton Avenues with specific safety requirements as trucks pass through the East San Jose Elementary School zone.

In order to guarantee truck compliance and restrict cut-through, Williams Street and all residential/community roads connecting to Broadway should be clearly marked with "no trucks" and/or "weight restriction" signage (recommend 5-ton limit) and the installation of engineering controls (physical barriers to trucks) such as traffic circles, at all neighborhood entrances. As traffic circles are often perceived as inconvenient to motorists, the community planning committee must educate residents on the needs and benefits of the circles to garner support.

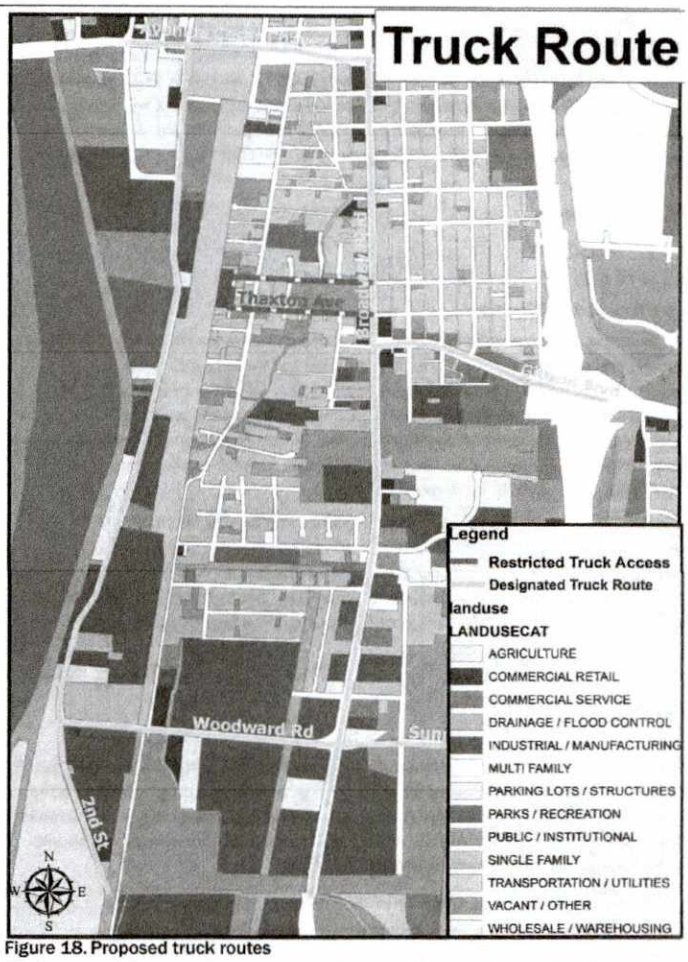

Figure 18. Proposed truck routes

Designated truck routes (in yellow) divert truck traffic away from residential areas, while Thaxton Avenue provides limited truck access for customers of Big Bear Petroleum

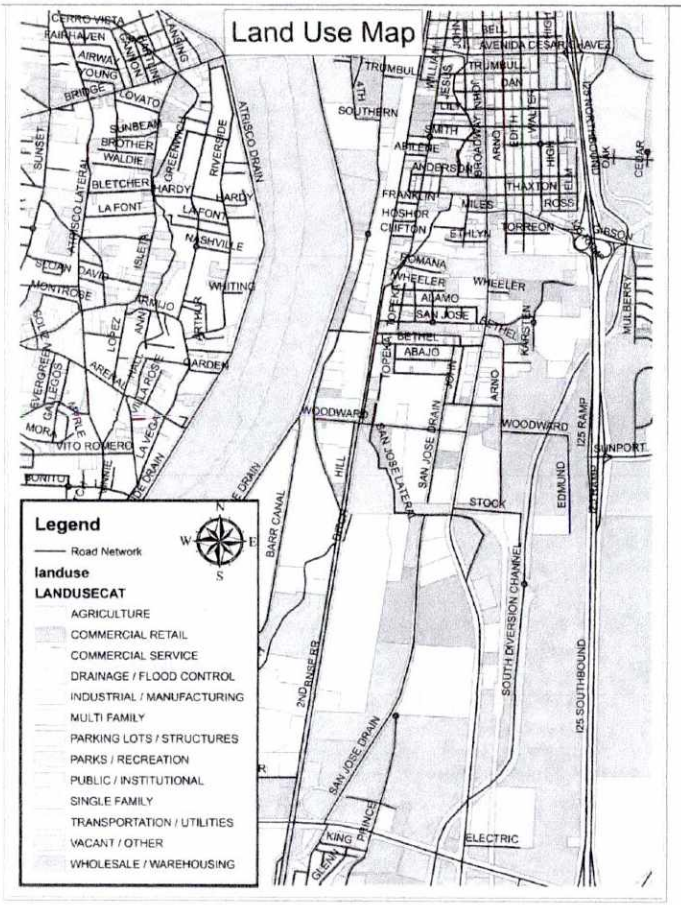

Figure 19. Existing land use

Existing land use based on City of Albuquerque GIS data

4.3. Engage in Comprehensive Land Use Planning and Zoning Efforts

The extension of Sunport Boulevard will create pressure for development of vacant land in the area of Woodward Road and beyond. It requires emphasis that the San Jose area has greater potential than simple industrial expansion - that is, development of vacant land need not result in increased heavy truck traffic, and that continued industrial growth is not predestined. The Woodward Road area, as part of the Sunport Extension, should take proactive measures in developing a new land use vision, and engage in zoning efforts to guide this change. Rather than continued industrial development, vacant land should be rezoned for hotels, restaurants, light commercial, and other activities that support the airport and community. Proximity and direct access to the airport make this absolutely prime real estate for tourism support, and these users would make much better neighbors than another freight-heavy industry. Given that these employment sectors account for a third of the jobs held by San Jose residents, development of this nature could increase local employment opportunity for community residents, and provide jobs easily accessible by walking, cycling, and transit.

Further zoning efforts should include the establishment of "buffer zones" between residential and industrial areas. Community involvement in local zoning should focus on efforts that encourage light commercial, office, recreation, or clean and low-intensity activities immediately around the community to form a buffer area and prevent further encroachment. Additionally, vacant land in the neighborhood should not immediately be deemed potential industrial, instead given every consideration for the best mixed-use solution that incorporates residential, commercial, and other uses where compatible. It has been shown that Mixed land use with deliberate design and planning has been effective at encouraging walking, cycling and transit ridership, while at the same time reducing dependency on the personal automobile.

4.4. Insist on High Quality Transit Services

Broadway Street is a well-traveled north-south arterial that connects business, government, university, and residential land uses. It is recommended that the San Jose neighborhood actively petition the City of Albuquerque Transit Authority for improved transit services to the area. The existing #16/18 route that serves the neighborhood can provide more effective transfers to connecting routes by increasing frequency and expanding service hours. The neighborhood and the transit system in general may benefit even more from running a separate and more direct line along Broadway Boulevard, perhaps as far north as Menaul Boulevard and down to Rio Bravo in the south. Such a route would intersect an appreciable

number of connecting routes that convey residents to their jobs (See Figure 9 on page 25) and fill the need for greater north-south connectivity in the ABQ Ride system. High quality bus service through the San Jose Neighborhood would provide residents with greater access to jobs, especially those businesses that require later work hours. A separate, direct route would be reliable and dependable, and more easily understood by users.

Current bus service to the Sunport is limited to a single route - the #50 - with long headways and short service hours. The Mid-Region Council of Governments is exploring the feasibility of introducing a Bus Rapid Transit line that would operate along University Boulevard from Menaul Boulevard to the Sunport. Improved connections between existing transit routes and increased service to the airport may, in the long run, could improve the mobility of San Jose residents even more than increased bus service through the neighborhood.

Albuquerque's conscientious investment in the overall transit system and simplification of routes would result in an increased trust in and reliance on public transportation and ease dependency on the private automobile. A reduction in vehicle travel demand would ease roadway congestion and assuage the need for robust roadway and network expansion.

4.5. Adopt "Complete Streets" Designs

The proposed Sunport Expansion design includes bicycle lanes and sidewalks, but falls short of a "complete street." In reality, cyclists and trucks do not interact well on the same piece of pavement, and the two simultaneous modes are impractical. It is recommended that the community raise the concerns of incompatibility in any new construction, and specifically call for a design review of the current proposed roadway cross-sections for conformity to current "Complete Streets" (or sontext sensitive) design objectives. That is, a "Complete Street" provides access, safety, and mobility for motorized and non-motorized transport. Incomplete streets limit transportation choices by making walking or cycling unsafe, or by making transit inconvenient, unattractive, or dangerous (SGA, 2014).

Public investment should not contribute to "Incomplete Streets," and the National Complete Streets Coalition can provide guidance and training to local communities through their website http://www.smartgrowthamerica.org/complete-streets/changing-policy. Educational materials, workbooks, analysis tools, and implementation brochures are available for download by local leaders and community representatives. Since every situation is unique, an effective "Complete Street" design of Woodward Road and Williams Street could take on several different forms, but must be able to safely accommodate all users and the San Jose neighborhood.

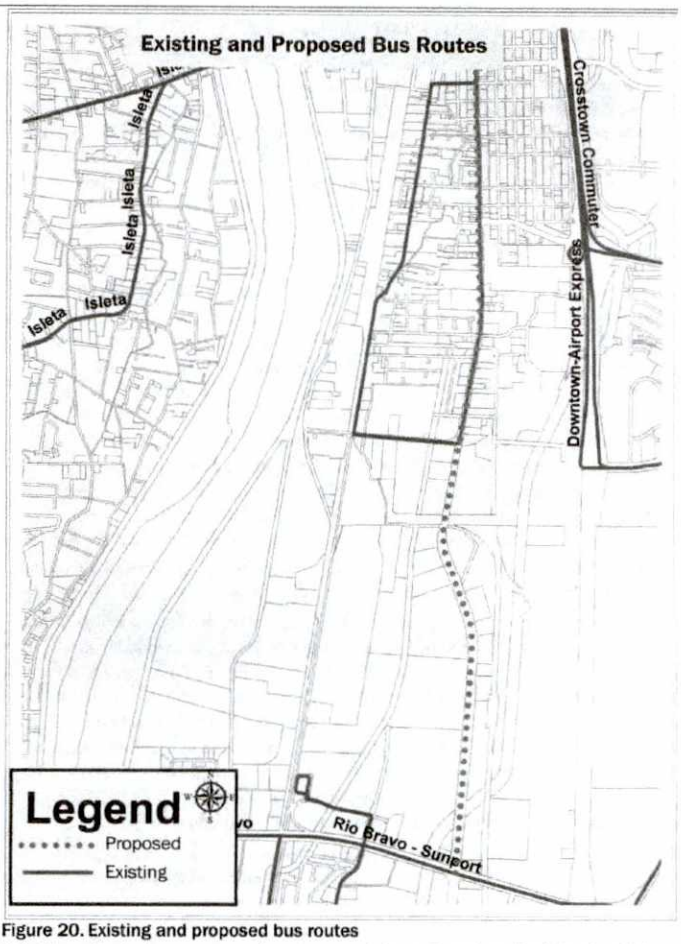

Figure 20. Existing and proposed bus routes

This figure illustrates a proposed route up and down Broadway Boulevard, which would connect the San Jose Neighborhood with multiple popular bus routes along Central Avenue (66/766/777), Lomas (5/11/790), and Menaul (8)

4.6. Clean Air Initiatives

Clean Air initiatives and anti-idling legislation combined with effective enforcement are successful at reducing diesel particulate matter (DPM) and improving local air quality. Parked trucks, those waiting at intersections, idling locomotives, and old outdated diesel engines all contribute significantly to poor air quality. Any measure to reduce or eliminate these pollution sources will improve air quality (and reduce noise and vibration) in the San Jose community. Several courses of action are available, and all will require extensive effort and coordination.

Designated truck routes around the community will nearly eliminate truck emissions from the immediate area and leaves only the most troubling source of unnecessary pollution - the idling locomotive. Replacing existing aging diesel-powered equipment with modern engines, powered by electricity or cleaner-burning fuel will greatly reduce the emissions from the rail yard. Since rail companies are private firms, public mandate of equipment modernization is problematic. Policy cannot normally require a rail company to modernize or electrify its existing locomotives, although permitting of new pollution sources can be governed so as to require modernization or threshold limitations. The most viable approach would be to pursue state offered incentives for equipment renewal. Incentives have proven successful in previous campaigns to modernize equipment fleets. In order to provision any incentive to a major rail company will require local legislator involvement. At the very least a county commissioner, but likely a state representative, will need to broker an incentive package for equipment buyback, loan guarantee, or tax break.

The long term solution to idling and clean air issues is to engage state legislators in the issue and highlight the merits of a statewide Clean Air Campaign as a proactive measure to prevent New Mexico from incurring EPA's Air Quality non-attainment status. The use of alternative fuels (natural gas, bio-fuels, etc) and hybrid technologies have shown progress in controlling emissions and improving air quality. The identification of major equipment operators in the area, and their fleet conversion to cleaner technologies could have measurable results to local air quality. Again, incentives and legislative mandates serve as encouragement for companies to make the necessary investments in equipment renewal.

However necessary, the need for a long-term solution is lengthy, and wrought with political complexity. In the short term, a truck or locomotive persistently idling can first be addressed directly to the offending company, and by public persuasion. Freight companies routinely congratulate themselves for their environmental stewardship and societal contributions. Idling locomotives are obviously contrary to stated mission objectives and can sometimes be attributed to poor local practices, or lack of corporate knowledge of the issue. A compelling, evidence-based argument from a well-organized community action group may provide the public pressure necessary to persuade a corporate entity to modify its behaviors and policies.

4.7. Seek Positive Interactions and Win-Win Approaches

Land use and new development presents major economic issues to the county, city, land owners, developers, and commercial interests, and every local transaction should be of interest to the San Jose neighborhood. As stakeholders, it is critical for the community to participate in the local planning, and to provide meaningful input, alternative solutions, and present the neighborhood as a community of families, culture, and ideals. A rallying cry of "Not in my backyard" alone is insufficient; the community must self-promote its values, to be relentless but compromising and to assume a place at the planning table. A positive relationship with planners, business interests and the residents of San Jose neighborhood builds honest and direct conversation for all stakeholders to have their concerns addressed. Specific local policies that may be beneficial to the San Jose community when negotiating land use decisions at the local level include:

- Employment guarantees for San Jose residents at new businesses in the immediate area, similar to the agreement that Intel made with Rio Rancho. As part of the permitting process, new businesses such as hotels and restaurants on the Sunport Extension may be required to hire a certain percentage of employees from the San Jose community.
- Establishment of buffer zones, or public green space, as tied to new land use. This could include land swaps between interested parties or municipalities for the creation of no-build zones, public green space, or similar quality of life improvement.
- Corporate investment (with county matching funds) in community programs, health campaigns, or after-school programs tied to local land use decisions.
- Mitigation of existing incompatibilities as tied to new land use. One simple example could include the city, or county, installing traffic circles at community access points as part of the Sunport extension project.

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5. Conclusions

About the writing of this report and recommended areas of future study

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5.1. Summary of Findings

San Jose neighborhood faces many social and economic challenges. The neighborhood already suffers from heavy industry and traffic pollution, and the Sunport Boulevard extension project will only add to the transportation-related problems. This report attempted to address the most critical transportation-related problems and provide the community with recommendations for future planning. To prepare the report, the authors identified potential options available to mitigate transportation problems in the area and reviewed research documents and case studies to determine the applicability of each option.

The research team made recommendations for long-range planning, zoning and design, mitigation, and education and outreach, each with specific actions aimed at improving the quality of life in San Jose.

The creation of a community planning and action group is essential to surpass the neighborhood problems faced by the community. Better communication connection can be established between community members, and the city when you have a hub where information, ideas and concerns of both sides are collected and discussed. A good relationship between stakeholders allows honest and direct conversation, enabling solutions that benefit both sides.

In order to reduce the traffic of heavy trucks and improve the air quality over the San Jose area, truck routes should be clearly established and marked to keep it outside the perimeter of the neighborhood. Signaling, engineering controls or physical barriers to trucks can be used to require the truck driver to make other routes. Possible conflicts with this action could be remediated with land swap negotiations, road realignments or tightly-permitted access to specific streets.

Other clean air initiatives include the reduction or elimination of practices such as parked trucks waiting at intersections, idling locomotives and outdated diesel engines that contribute significantly to poor air quality.

With the extension of Sunport Boulevard, vacant lands gain a high commercial value that can be turned not only into industries, but also be induced to be commercial areas, with hotels, restaurants and touristic places, seizing the opportunity to the new close access to the airport. A better mixed land use solution must be considered in order to improve life quality of the community, encouraging walking and cycling rather than personal automobile. Besides, the improvement on the bus services is really required. High quality bus service through the San Jose Neighborhood would provide residents greater access to jobs, especially the industries with late schedules.

The project of the extension of Sunport Boulevard does not follow the concept of a "complete street" and it is recommended that the community raises the concerns about incompatibility in any new construction and specifically claim a design review of the current proposed roadway.

A good relationship between stakeholders is essential to present all concerns and arrive to a workable agreement for both parties. San Jose can beneficiate from policies in a possible negotiation, such as the employment warranty of a percentage of new ventures in the area; the establishment of buffer zones to create a better connection between industries and residences; investment in community programs, health and education; mitigation of existing land-use incompatibilities.

Provided recommendations help people to be more prepared to engage in community-led planning. Community-led planning enables every citizen to participate in, and contribute to improving the social, economic, environmental and cultural well-being of their local area.

5.2. Limitations

The research team approached this assignment with the best interests of the San Jose Neighborhood in mind. They were pleased to discover a vibrant, thriving, and proud community, responding admirably in the face of adversity. While the authors take pride in the opportunity to provide these recommendations to the community, they recognize and acknowledge the limitations imposed by the task.

Unfortunately, the nature of this undertaking was in and of itself a limitation. As a class project, this report was completed without any funding. The project was completed in an extremely short time frame of three months. Projects of this magnitude generally rely on large teams of highly experienced professionals, working directly with the community over several months through interactive workshops and public meetings. As a result of the limited interaction the team had with community stakeholders, the report provides at best a high-level birds-eye view of the neighborhood, lacking the rich cultural fabric and personality of San Jose's residents.

Because of the lack of resources and time, the research team was unable to perform detailed, comprehensive quantitative assessment on any of the proposed strategies. The group qualitatively assessed different strategies, often relying on case studies to identify those strategies that succeeded in similar contexts. This document cannot provide any evidence to definitively suggest that the recommended strategies would be effective and successful in the San Jose Neighborhood.

5.3. Recommendations for future research

Based on the limitations of this project, the authors recommend a quantitative assessment of different strategies on transportation-related problems, including quantitative models of travel demand, urban development, air quality and dispersion, traffic safety and economic effects. Individual and combined strategies proposed in this report should be analyzed to determine their effects on economic growth and transportation externalities in the area. To do so, the team recommends the following tools:

- CUBE: This model might be used to run travel demand model and see how different strategies change the level of motorized, non-motorized and transit demand.
- TranSight: This model can be used to study the economic impacts of transportation system.
- UrbanSim: This model can be used to predict future urban development, socio-economic variables and land-use patterns resulted from modified transportation network.
- MOVES: This model is used to estimate emission rates along the roadways.
- AERMOD: Emission rates from MOVES and traffic volumes from CUBE along with a set of geographical and meteorological data is then used in AERMOD to model pollution dispersion.

These methods can begin to quantify how people are exposed to different pollutants. Dr. Rowangould's research team can model and analyze the effect of different policies on population exposure to different pollutants.

The Mid-Region Council of Governments (MRCOG), the Albuquerque Metropolitan Region's metropolitan planning organization (MPO) is currently updating region's long range transportation plan. The authors advise the community to engage with the MPO to analyze the effect of different strategies using recommended tools. In this way, they can ensure that the policies regarding the neighborhood serve to mitigate some of the problems discussed in this report and increase residents' quality of life.

6. Works Cited

References used in this report and suggested bibliography on the topics discussed

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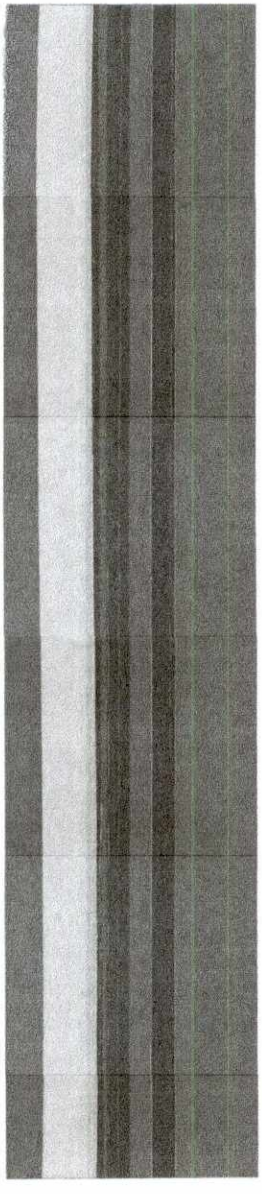
Works Cited

- Abbasi, Mousa. (1996, August). U.S. Intermodal Freight Transportation; Opportunities and Obstacles. Federal Highway Administration, Washington DC.
- Alexander, Don, and Ray Tomalty. (2002). "Smart growth and sustainable development: Challenges, solutions and policy directions." Local Environment 7, no. 4 (2002): 397-409.
- Allen, J., Browne, M., Woodburn, A., and J. Leonardi. (2012, July). The Role of Urban Consolidation Centres in Sustainable Freight Transport. Transport Reviews, Vol 32, 473-490.
- Allpress, J. A., & Leland, L. S. (2010). Reducing traffic speed within roadwork sites using obtrusive perceptual countermeasures. Accident Analysis & Prevention, 42(2), 377-383. doi:10.1016/j.aap.2009.08.014
- American Transportation Research Institute (2013). Compendium of Idling Regulations. Retrieved from http://www.atri-online.org/research/idling/ATRI_Idling_Cab_Card.pdf
- American Trucking Association. (2009). Trucking FAQ and STATS. American Trucking Association: "TruckLine". [Online] ATA, 2009. [Cited: Mar 3, 2010.] http://www.truckline.com/Programs/Documents/Image%20Tools%20and%20Information/Trucking%20Industry.pdf.
- Anas, A., & Lindsey, R. (2011). Reducing Urban Road Transportation Externalities: Road Pricing in Theory and in Practice.Review Of Environmental Economics And Policy, 5(1), 66-88.
- Association of American Railroads. (2009). AAR Position Papers. Association of American Railroads. [Online] AAR, 2009. [Cited: Feb 22, 2010.] http://www.aar.org/incongress/incongress.aspx.
- Berke, Philip R., Jack Kartez, and Dennis Wenger. (1993). "Recovery after disaster: achieving sustainable development, mitigation and equity." Disasters 17, no. 2 (1993): 93-109.
- Bernalillo County. (2013, September 18). Public Meeting: Sunport Boulevard Extension, Bernalillo County, NM [slideshow]. Retrieved on February 17, 2014 from http://www.bernco.gov/upload/images/public_works/Projects/Sunport_Public_Meeting_Presentation_Sept2013.pdf.
- Blumenberg, E. and Manville, M. (2004, November 10). Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy. Journal of Planning Literature, Volume 19 Number 182, pp 182-205.
- Boarnet, M.G., Day, K., Anderson, C., McMillan, T., Alfonzo, M. (2005). California's Safe Routes to School program: impacts on walking, bicycling, and pedestrian safety. Journal of the American Planning Association 71, 301-317.
- Buehler, R., Pucher, J. (2012). Cycling to work in 90 large American cities: new evidence on the role of bike paths and lanes. Transportation 39, 409-432. doi:10.1007/s11116-011-9355-8
- Cao, X. (Jason), Mokhtarian, P.L., Handy, S.L. (2009). Examining the Impacts of Residential Self-Selection on Travel Behaviour: A Focus on Empirical Findings. Transp. Rev. 29, 359-395. doi:10.1080/01441640802539195
- Carrico, A. Padgett, P. Vandenbergh, M. Gilligan, J. Wallston, K. (2009). Costly myths: An analysis of idling beliefs and behavior in personal motor vehicles. <http://idlefreevt.org/misc_pdf/costly_myths_an_analysis_of_idling.pdf
- Castro, J. T.and Kuse, H. (2005) Impacts of large truck restrictions in freight carrier operations in Metro Manila. Retrieved from http://www.easts.info/on-line/journal_06/2947.pdf
- Cervero, Robert, and Carolyn Radisch. (1996). "Travel choices in pedestrian versus automobile oriented neighborhoods." Transport Policy 3, no. 3: 127-141.
- City of Albuquerque. (2009). Code of City Ordinances: Safety and Sanitation Chapter 9: Noise, Albuquerque, NM. [cited: Apr 30, 2014] http://www.cabq.gov/ environmentalhealth/ documents/chapter9noiseordinance.pdf.
- Currie, G. (2005). The demand performance of bus rapid transit. Journal of Public Transportation, 8(1), 41-55.
- de Nazelle, Audrey, Daniel A. Rodríguez, and Douglas Crawford-Brown. (2009). "The built environment and health: impacts of pedestrian-friendly designs on air pollution exposure." Science of the total environment 407, no. 8: 2525-2535.
- DeWitt, William and Jennifer Clinger. (2000). Intermodal Freight Transfer. Washington, DC : Transportation Research Board.
- Dill, J., Carr, T. (2003). Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them, Commuters Will Use Them. Transp. Res. Rec. J. Transp. Res. Board 1828, 116-123. doi:10.3141/1828-14.
- Environmental Protection Agency (EPA). (n.d.). EPA. Retrieved May 4, 2014, from http://www.epa.gov/climatechange/ghgemissions/gases/co2.html.
- Ewing, R., Cervero, R. (2010). Travel and the Built Environment. J. Am. Plann. Assoc. 76, 265-294. doi:10.1080/01944361003766766.
- Ewing Reid, and Haliyur P, and Page, GW. (1994). Getting around a traditional city, a suburban planned unit development, and everything in between. Transportation Research Record 1466: 53-62.

- Fan, Y., Guthrie, A., and Levinson, D. (2012). Impact of light-rail implementation on labor market accessibility: A transportation equity perspective. The Journal of Transport and Land Use, Volume 5 Number 3, pp 28-39.
- Forkert, S. Eichhorn, C. (2013). Innovative approaches in city logitics inner-city night delivery. Retrieved from http://www.niches-transport.org/fileadmin/archive/Deliverables/D4.3b_5.8_b_PolicyNotes/14683_pn7_night_delivery_ok_low.pdf
- Federal Highway Administration. (n.d.). Health and Environmental Benefits of Walking and Bicycling [website]. Retrieved April 26, 2014 from http://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/data/benefits_research.cfm
- Federal Highway Administration. (2008). Freight and Congestion. The Freight Story: A National Perspective on Enhancing Freight Transportation. [Online] USDOT FHWA, 2008. [Cited: Mar 22, 2010.] http://ops.fhwa.dot.gov/freight/freight_analysis/freight_story/congestion.htm.
- Federal Rail Administration. (2009). Freight Railroading. Federal Rail Administration. [Online] US Department of Transportation, 2009. [Cited: Feb 22, 2010.] http://www.fra.dot.gov/pages/4.shtml.
- Forsyth, A., Oakes, J.M., 0. (2013, March 5). Cycling, the Built Environment, and Health: Results of a Midwestern Study. Int. J. Sustain. Transp. 0, null. doi:10.1080/15568318.2012.725801
- Frank, Lawrence D., and Gary Pivo. (1999). Impacts of Mixed Use and Density on Utilization of Three Modes of Travel: Single-Occupant Vehicle, Transit, and Walking. Transportation Research Record sponsored by Committee on Transportation and Land Development.
- Frank, Lawrence D., James F. Sallis, Terry L. Conway, James E. Chapman, Brian E. Saelens, and William Bachman. (2006). "Many pathways from land use to health: associations between neighborhood walkability and active transportation, body mass index, and air quality." Journal of the American Planning Association 72, no. 1: 75-87.
- Giles-Corti, Billie, Sarah Foster, Trevor Shilton, and Ryan Falconer. (2010). "The co-benefits for health of investing in active transportation." New South Wales public health bulletin 21, no. 6: 122-127.
- Graham, D. J. (2007). Agglomeration, productivity and transport investment. Journal of transport economics and policy (JTEP), 41(3), 317-343.
- Grinder, R. Dale. (2005). USDOT Office of the Historian. US Department of Transportation. [Online] USDOT, 2005. [Cited: Feb 3, 2010.] http://ntl.bts.gov/historian/history.htm
- Guerra, Erik (2010) Valuing Rail Transit: Comparing Capital and Costs to Consumer Benefits. Retrieved from University of Berkeley Institute of Urban and Regional Development Web site: http//:iurd.berkeley.edu/publications/wp/2010-04.pdf.
- Guo, Jessica Y. and Gandavarapu, Sasanka. (2010, January). An Economic Evaluation of Health-Promotive Built Environment Changes. Preventive Medicine, Volume 50, Supplement. pS44-S49.
- Henderson, Dennis K., and Patricia L. Mokhtarian. (1996). "Impacts of center-based telecommuting on travel and emissions: analysis of the Puget Sound Demonstration Project." Transportation Research Part D: Transport and Environment 1, no. 1: 29-45.
- Hensher, D. A. (2007). Sustainable public transport systems: Moving towards a value for money and network-based approach and away from blind commitment. Transport Policy, 14(1), 98–102. doi:10.1016/j.tranpol.2006.10.004.
- Herrick, D., Santelli, F., Sciarabba, A. and P. Messmer. (2011). Strategies for the Effective Mitigation of Heavy Trucking on Local Roads. Tompkins County, NY: Public Record [cited 25 Apr 2014] http://www.stcplanning.org/usr/Program_Areas/Energy/Naturalgas_Resources/Strategies_for_the_effective_mitigation_of_heavey_trucking_on_local_roads_white_paper.pdf
- Hixson, M., Mahmud, A., Hu, J., Bai, S., Niemeier, D. A., Handy, S. L., ... & Kleeman, M. J. (2010). Influence of regional development policies and clean technology adoption on future air pollution exposure. Atmospheric Environment, 44(4), 552-562.
- Hopwood, Bill, Mary Mellor, and Geoff O'Brien. (2005). "Sustainable development: mapping different approaches." Sustainable development 13, no. 1: 38-52.
- Institute for Transport Studies (ITS LEEDS) & Consultores em Transportes, Inovação e Sistemas, S.A. (2010). A worldwide overview on urban logistic interventions and data collection techniques. University of Leeds. Retrieved from http://www.bhtrans.pbh.gov.br/portal/page/portal/portalpublicodl/Temas/Automovel/TURBLOG_WW-2013/TURBLOG_D1NOV12.pdf
- Karner, A., Eisinger, D., Bai, S., and D. Niemeier. (2009). Mitigating Diesel Truck Impacts in Environmental Justice Communities: Transportation Planning and Air Quality in Barrio Logan, San Diego, California. Washington DC: Transportation Research Record, No 2125, 2009.

- Kitamura, Ryuichi, and Patricia L. Mokhtarian, and Laura Laidet. (1997). A micro-analysis of land use and travel in five neighborhoods in the San Francisco Bay Area. 125-158. Kluwer Academic Publishers: Printed in the Netherlands.
- Leigh, N., and N. Hoelzel. (2012). Smart Growth's Blind Side: Sustainable Cities Need Productive Urban Industrial Land. Journal of the American Planning Association, Vol 78 No 1, Winter 2012.
- Loukaitou-Sideris, A. (2006). Is it Safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking. J. Plan. Lit. 20, 219–232. doi:10.1177/0885412205282770
- Maroudas, E. (2011, February). City logistics for sustainability the case of stockholm . Retrieved from http://dspace.lib.ntua.gr/bitstream/123456789/3875/3/maroudas-tsakyrellise_citylogistics.pdf
- Marshall, Julian D., Thomas E. McKone, Elizabeth Deakin, and William W. Nazaroff. (2005). "Inhalation of motor vehicle emissions: effects of urban population and land area." Atmospheric Environment 39, no. 2: 283-295.
- Massachusetts General Law (MGL), Chapter 90, Section 16A, 310 Code of Massachusetts Regulation (CMR), Section 7.11 and MGL, Chapter 111, Sections 142A – 142M. The Massachusetts Anti-Idling Law. https://www.mtholyoke.edu/sites/default/files/ehs/docs/massidlinglaw.pdf
- McNally MG & Ryan S. (1993). A comparative assessment of travel characteristics for neotra- ditional developments. Paper presented at the 72nd Annual Meeting of the Transportation Research Board, Washington, D.C (1993).
- Moudon, A.V., Lee, C., Cheadle, A.D., Collier, C.W., Johnson, D., Schmid, T.L., Weather, R.D. (2005). Cycling and the built environment, a US perspective. Transp. Res. Part Transp. Environ. 10, 245–261. doi:10.1016/j.trd.2005.04.001
- Neighborhood Scout. (2014). About San Jose. Retrieved April 20, 2014 from http://www.neighborhoodscout.com/nm/albuquerque/san-jose/#desc.
- New York City Department of Transportation. (2006). Truck Route Management and Community Impact Reduction Study. New York City Department of Transportation, Technical Memorandum 1, May 2006. [cited: 25 Apr 2014] http://www.nyc.gov/html/dot/html/motorist/truckrtemgmt.shtml
- Office of Freight Management and Operations. (2009). Freight Facts and Figures 2009. Washington, DC : USDOT: Office of Freight Management and Operations, 2009. FHWA-HOP-10-007.
- Ogden, K. W. (1992). Urban Goods Movement – A Guide to Policy and Planning. Brookfield: Ashgate Publishing.
- Ortiz, Brian et al. (2007). Increasing the Capacity of Freight Transportation: US and Canadian Perspectives. Santa Monica : RAND, 2007.
- Owen, Neville; Humpel, Nancy; Leslie, Eva; Bauman, Adrian; and Sallis, James F. (2004, July). Understanding Environmental Influences on Walking: Review and Research Agenda. American Journal of Preventative Medicine, Volume 27, Issue 1, p67-76.
- Painter, K. (1996). The influence of street lighting improvements on crime, fear and pedestrian street use, after dark. Landsc. Urban Plan, Streets Ahead 35, 193–201. doi:10.1016/0169-2046(96)00311-8
- Peters, J. R., & Gordon, C. (2009). Results Not Guaranteed: A Tale of Road Pricing in New York and London. Journal Of Urban Technology, 16(1), 113-131. doi:10.1080/1063073090309038
- Pucher, J., Dijkstra, L. (2003). Promoting safe walking and cycling to improve public health: lessons from The Netherlands and Germany. Am. J. Public Health 93, 1509–1516.
- Rabl, A., de Nazelle, A. (2012). Benefits of shift from car to active transport. Transp. Policy 19, 121–131. doi:10.1016/j.tranpol.2011.09.008
- Research and Innovative Technology Administration. (2008). US Freight on the Move: Highlights from the 2007 Commodity Flow Survey. Washington, DC : Bureau of Transportation Statistics. SR-018.
- Robert Schalkenbach Foundation. (n.d.). Report on London's Congestion Charge Scheme. Retrieved May 4, 2014, from http://schalkenbach.org/rsf-2/report-londons-congestion-charge-scheme/. Wetzel, D.
- Saelens, B.E., Handy, S.L. (2008). Built Environment Correlates of Walking: A Review. Med. Sci. Sports Exerc. 40, S550–S566. doi:10.1249/MSS.0b013e31817c67a4.
- Saelens, B.E., Sallis, J.F., Frank, L.D. (2003). Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literatures. Ann. Behav. Med. 25, 80–91. doi:10.1207/S15324796ABM2502_03
- Schank, J., Hirschman, I., and E. Preston. (2008). Freight Transportation Planning: Best Practices and Benchmarking Survey. Washington DC: Transportation Research Record, No 2077, 2008.
- Schweitzer, L., & Zhou, J. (2010). Neighborhood air quality, respiratory health, and vulnerable populations in compact and sprawled regions. Journal of the American Planning Association, 76(3), 363-371.

- Simons, R., and A. Jaouhari. (2004). The Effect of Freight Railroad Tracks and train Activity on Residential Property Values. The Appraisal Journal, pp 223-233, Summer 2004.
- Smart Growth America (n.d.). Policy Elements. Retrieved May 4, 2014, from http://www.smartgrowthamerica.org/complete-streets/changing-policy/policy-elements.
- Southworth, Frank and Wigan, M. (2008). Movement of Goods, Services, and People: Entanglements with Sustainability Implications. [book auth.] Adrian Perrels. Building Blocks for Sustainable Transport: Obstacles, Trends, Solutions. Bingley : Emerald Group Publishing, Ltd., 2008.
- Taleshi, Mostafa, and Sara Bishehii. (2012, February 1). Residential and Industrial Compatibility by Mixed Land Use, Zoning and Urban Design Case Study Varvard Near Tehran Metropolys. 1923-6654. OIDA
- Tario, J. D. (2002). Alternatives to Diesel Truck Idling. Environmental Quality Management, 11(4), 95-99.
- Tirachini, A., Hensher, D. A., & Jara-Díaz, S. R. (2010). Comparing operator and users costs of light rail, heavy rail and bus rapid transit over a radial public transport network. Research in transportation economics, 29(1), 231-242.
- University of New Mexico. (2008, March). UNM Strategic Framework for 2008 and Beyond. Retrieved on 16-April-2014 from http://presidentialsearch.unm.edu/strategicframework.pdf.
- US Census Bureau. (2011, 2nd Quarter). LEHD Origin-Destination Employment Statistics, Home Area Profile Report of Selection Area Freehand Drawing. Retrieved March 30, 2014.
- US Census Bureau. (2011, 2nd Quarter). LEHD Origin-Destination Employment Statistics, Distance/Direction Report of Selection Area Freehand Drawing. Retrieved March 30, 2014.
- US Census Bureau. (2011, 2nd Quarter). LEHD Origin-Destination Employment Statistics, Work Area Profile Report of jobs earning $1,250 per month or less in Albuquerque city, NM and South Valley CDP, NM. Retrieved March 30, 2014.
- US Census Bureau. (2011, 2nd Quarter). LEHD Origin-Destination Employment Statistics, Home Area Profile Report of Selection Area Freehand Drawing. Retrieved March 30, 2014.
- Vincent, William. (2010). Bus Rapid Transit in the United States. Built Environment 36.3 298-306. Retrieved from http://ingentaconnect.
- Walker, Jarrett. (2012). Human Transit: How Clearer Thinking About Public Transit Can Enrich Our Communities and Our Lives. Washington, D.C.: Island Press.
- Woudsma, Clarence. (2001). Understanding the Movement of Goods, Not People: Issues, Evidence and Potential. Urban Studies, Vol 38, No 13, pp. 2439-3455, 2001.




UNM
SCHOOL of ENGINEERING

From:	Rahim Kassam
To:	Renz-Whitmore, Mikaela J.
Cc:	rahimkassam@gmail.com; Planning Comp Plan-UDO
Subject:	Re: Parking standards in IDO
Date:	Wednesday, April 19, 2017 5:10:23 PM

Thank you. Let me add something officially to the comments for the IDO:

Currently in most parts of the city, the parking requirement for hotels is one space per rental unit. This is way too high as nowadays there are more ridesharing options such as Uber & Lyft and visitors don't want or need to rent cars. Many hotels also have airport and area shuttles and we should encourage visitors to use ART while in Albuquerque. The requirement should be half of the spaces currently required. The city needs to be flexible with these parking standards so that smaller, local hotels can compete with the boom in large chain hotels and casino subsidized hotels. Let's fix this dated standard while we have a chance so that Albuquerque can can compete with other cities that have lots of local boutique hotels and bed and breakfasts.

Thank you,
Rahim Kassam

On Apr 19, 2017, at 5:00 PM, Renz-Whitmore, Mikaela J. <mrenz-whitmore@cabq.gov> wrote:

> IDO is online here:
> https://abc-zone.com/sites/abc-zone.com/files/document/pdf/ABQ_IDO_EPC_Draft_12-29-16_web.pdf
>
> Parking standards are in Table 4-5-5 , starting on page 204.
>
> Please submit any comments for EPC consideration by 1 p.m. tomorrow. Comments received after that deadline will be forwarded to Council for consideration at the next stage in the adoption process.
>
> General page about the adoption process for the IDO is here:
> https://abc-zone.com/document/abq-ido-epc-submittal-draft
>
> Best,
>
> **Mikaela Renz-Whitmore, Planner**
> City of Albuquerque Planning Department, Urban Design & Development Division
> Project Planner – ABC to Z
> 505-924-3932
> mrenz@cabq.gov
> **<image003.jpg>**

From:	bg
To:	Planning Comp Plan-UDO
Subject:	Fwd: IDO
Date:	Thursday, April 20, 2017 7:46:03 AM
Attachments:	RANA comment for IDOABC to Z Comp.pdf

I am concerned that our letter from RANA is not signed. I received the attached showing it is from the Board. I hope you can substitute this in the hope such a letter will be seriously considered.
Thank you.

Sent from my iPad

Begin forwarded message:

> **From:** bg <bgrothus@aol.com>
> **Date:** April 20, 2017 at 6:34:13 AM MDT
> **To:** bgrothus@aol.com
> **Subject: IDO**
>
> Sent from my iPad

RANA

RAYNOLDS ADDITION NEIGHBORHOOD ASSOCIATION

April 18, 2017

To Whom It May Concern:

The Raynolds Addition Neighborhood Association (RANA) submits this comment as input to the ABC to Z Comp Plan and IDO process. While we understand that current zoning permits development in the portion of our neighborhood from 10th to 8th streets, it is important to us that any development in in this area respect the traditional and historic nature of our older neighborhood and integrates these aspects into its design. As the current sector plan for RANA states, RANA has an “architecturally coherent scale, (and) presents a unique opportunity in Albuquerque for neighborhood conservation”. The residents of RANA strongly support the language of the sector plan and want any new development in the neighborhood, especially in the blocks from 10th to 8th streets, to honor the intent within the sector plan. The residents of Raynolds Addition appreciate the small scale aesthetic character and feel of our neighborhood and want the current fabric of our neighborhood to be preserved and respected, rather than usurped or overwhelmed by newer, larger development practices.

Sincerely,

Raynolds Addition Neighborhood Association Board of Directors

North Valley Coalition, Incorporated
P.O. Box 70232
Albuquerque, New Mexico 87197-0232

April 20, 2017

Ms. Karen Hudson, Chair
Environmental Planning Commission
600 2nd Street NW
Albuquerque NM 87102

Re: Project # 1001620

Dear Ms. Hudson;

We wish to first acknowledge the responsiveness of the ABC-Z team to our letter of November 4, 2016 and their willingness to continue to listen to our concerns. We also wish to state that we are not categorically opposed to the consolidation and simplification of the zoning and approval process.

However, in the latest version of the IDO there remain significant concerns about two areas of the IDO. Specific significant areas of concern are:

1. Creation of new permissive uses in residential areas (zone changes not subjected to 270-1980)

2. Inconsistent treatment of neighborhoods within the North Valley.

With respect to each of the items above we have the following comments:

Creation of new permissive uses in residential areas (zone changes)

On page 105 of the IDO there are two new permissive uses in the R-A, R-1, and R-T zones: Co-housing developments, and Cottage developments. The density of each of these two permissive uses is significantly more than the existing guidelines for development in the respective zones (see 3.3.2.C and 3.3.2.D on pages 121 and 122). This is especially true in the new R-A, (Rural and Agricultural) zone district. The current guidelines limit residential development in the RA-2 zone to one residence per ¼ acre or four residences per acre. The new permissive uses determine the number of housing units by dividing the total area of a site by 2,500. This results in permitting up to seventeen dwelling units on an acre (43,560/2,500). This is greater than a four-fold increase. It is the same density as that for the Residential Manufactured Home Community Zone (see 14-16-2-3.3 on page 13).

Inconsistent treatment of neighborhoods within the North Valley.

The Los Duranes Character Protection Overlay Zone has several standards that should be considered for other sections of the North Valley, if not the entire North Valley.

Section 14-16-2-7.2.4b (page 76) States "In the R-A Zone District, lot coverage (the total square footage of the principle residence footprint.+ accessory building footprints) shall not exceed 50% of parcel". This standard should apply to all R-A properties. Note that the standards for the R-A zone district (not within the Los Duranes CPO), 14-16-2.2.3.1, has the comment N/A for the "Usable open space. Min % of lot".

Section 14-16-2-7.2.4d (page 76 of the Los Duranes CPO) limits building height in the R-A, R1, R-T and R-ML Residential zone districts to 16 feet.

We ask that you propose the following conditions of approval when the IDO is submitted to the full City Council:

1. Remove Cottage Developments and Co-housing developments from the list of permissive uses in the R-A zone. This would be consistent with the purpose of the R-A zone district which states: "The purpose of the R-A zone district is to provide for **low-density (emphasis added)** single family residences and limited agricultural uses...."
2. Incorporate standards 14-16-2-7.2.4b and 14-16-2-7.2.4d, from the Los Duranes CPO, throughout the North Valley..

Very sincerely,

Doyle Kimbrough for

Peggy Norton, President

David Wood, Vice-President
Kyle Silfer, Secretary
Doyle Kimbrough, Treasurer
Patricia Martinez, Member
Robert Dickerson, Member

North Valley Coalition, Inc. Executive Committee

From:	LORETTA A NARANJO-LOPEZ
To:	Planning Comp Plan-UDO
Cc:	sanignaciochurchabq; Robert` Woodruff; jeslopez; Ivan Westergaard; Christina Dauber; Javier Martinez; jortizyp; joaquinrsanchez; Ivan Westergaard; Martha Powers; jaelyn deMaria; Christine Critter Montoya; gilsman1; Rosalie Martinez; Bianca Encinias; Diana; robert.nelson.abq; winterjesse; Angela Vigil; Rene Harvoth
Subject:	MWG Comments on IDO dated April 20, 2017
Date:	Thursday, April 20, 2017 12:05:44 PM
Attachments:	MWGCOMMENTSONIDO4202017.docx

I have attached the comments in regard to the Integrated Development Ordinance. If you should have any questions, please call me at 270-7716.

Thank you.

Loretta Naranjo Lopez, President
Martineztown Work Group

1127 Walter NE
Albuquerque, NM 87102
(505)270-7716

April 20, 2017

Karen Hudson, Chair
Environmental Planning Commission
600 Second Street NW, 3rd Floor
Albuquerque NM 87102

Attn: Catalina Lehner, Staff Planner

RE: COMMENTS ON THE PROPOSED IDO BASED ON THE MARTINEZTOWN/SANTA BARBARA SECTOR PLAN, RESOLUTION 270-1980 AND CURENT ZONING CODE Section 14-16-1-3 INTENT, CURRENT COMP PLAN AND UPDATED COMP PLAN

Dear Chair Hudson,

The Martineztown Work Group is writing to request a 14 -16 month deferral on the Integrated Development Ordinance (IDO). The reason for the deferral is that the IDO violates the City of Albuquerque Comprehensive Zone Code and Resolution 270-1980. The recommended zone categories for Martineztown/Santa Barbara Neighborhood and regulations do not protect the health, safety and welfare of the residents. The IDO does not preserve and protect the neighborhood with the proposed IDO zoning. The IDO is confusing and the residents should be able to understand what major changes the City of Albuquerque will impose on residential property owners.

The Integrated Development Ordinance (IDO) is proposing to replace the City Comprehensive Zoning Code, but the IDO does not relate to the development in Albuquerque. The current City Comprehensive Zone Code is very user friendly for the community. (See A Zoning Code Overview for General Public 2009 by Matthew Conrad). The Martineztown/Santa Barbara Sector Plan addresses a comprehensive set of issues affecting the neighborhood, ranging from social services to land use and economic revitalization. Some of the key recommendations which followed the Comprehensive Plan were to maintain the unique character of the neighborhood, promote neighborhood stabilization by adopting the SU-2 zoning to resolve land use and zoning conflicts. All Sector Plans are required to follow the Rank 1 plan and the zone categories refer to the City Comprehensive City Zone Code with some amendments. IDO has little restrictions to protect the health, safety and welfare of the residents. The proposed zone categories are confusing and deceiving. The proposed mixed use categories allow all commercial or all apartments, but no single-family. Mixed Use for who and who benefits? The new zone categories are more intense and denser than the current zoning code and are incompatible in historical neighborhoods. Based on Article IX, Environmental Protection, the zone categories do not maintain an aesthetic and humane environment and therefore should not be allowed.

The City of Albuquerque refers to the Albuquerque & Bernalillo County Comprehensive Plan that was enacted by the City on April 7, 2017. The IDO states on page 1-3.1., implement the

adopted Albuquerque-Bernalillo County Comprehensive Plan as amended, but the updated Comprehensive plan has not been approved by the Bernalillo County Commission, so the IDO cannot be enacted and therefore the process should be deferred.

On page 307 of IDO, the City of Albuquerque refers to 5.3.2 Facility and Metropolitan Redevelopment Area Plans. The City of Albuquerque states that the MRA for Martineztown does not have a plan, but the plan is the sector plan and there is also a report included. This needs to be legally reviewed since an MRA according the legal process could have not been approved without a plan. If the sector plan goes away what happens to the MRA for Martineztown? This is an unresolved matter that needs to be dealt with prior to the approval of IDO. MWG recommends that sector plans are included in the IDO.

The IDO states under the Planning System 5.3.3., on Community Planning Area Assessments. Any type of community planning requires that assessments are done prior to approval a plan. The City of Albuquerque should be required to provide the assessments prior to the approval of the IDO.

The zoning in Martineztown/Santa Barbara was established in error and should have been dealt when the zoning was established in 1990 under the current City Zoning Code. The permissive use of heavy commercial businesses is detrimental to the residential quality of life. The City Planning Department according the sector plan for Martineztown/Santa Barbara recommends a review of the zoning in five years based on the goals and objectives after it was adopted. (See MT/SBSDP, pages 7, 8, under G. Zoning, page 70) The City failed to follow their policies and regulations. The City for the last nine years had an opportunity to correct the error, but failed. The neighborhood wants the protection that all residential single-family land use has through some parts of Martineztown/Santa Barbara and throughout the city of Albuquerque that are zoned R-1 prior to the adoption of IDO. Sites Southwest 2009 draft Sector Development Plan for Martineztown/Santa Barbara with the 2009 map needs to be included in the new zone code. If the City does not deal with zoning now, Martineztown/Santa Barbara permissive incompatible uses will be allowed and the predominant single-family dwellings will be non-conforming whereas under the R-2 the R-1 uses are permissive. The protection that all residential neighborhoods have currently under R-1 will be denied for only Martineztown/Santa Barbara neighborhood. Under the City Zone Code, the required R-1 zone category will create orderly harmonious development in order to promote the health, safety, convenience, and welfare of the citizens of the city. The City proposed MX zones and other zone categories, do not follow Section 14-16-1-3 Intent to create orderly, harmonious, and economically sound development in order to promote the health, safety, convenience, and general welfare of the city. These regulations are necessary to provide adequate open spaces for light and air including solar access, to avoid undue concentration of population, to secure safety from fire, panic, and other dangers to help control congestion in the streets and public ways to and abate unsightly use of buildings or land. The City should encourage the most appropriately use of land which is R-1 for the historical neighborhood and conserve and stabilize the value of property.

The IDO violates the City of Albuquerque Resolution 270-1980 and the City of Albuquerque Comprehensive City Zoning Code. The IDO is not consistent with the health, safety, morals and general welfare of the City. The uses proposed in the historical residential area are incompatible.

The permissive four to six story apartments are incompatible in Martineztown/Santa Barbara. 3) Any type of liquor establishment should not be allowed in a family friendly neighborhood. The C-2 allows incompatible uses including full service bar. The current zone requires all business to be conducted in enclosed building and the proposed zone categories allow open storage. The housing between Mountain and Rosemont south of Broadway is zone NR-LM. This area has always been single-family dwellings with some C-1 uses that supported the neighborhood needs. The historical single family dwellings are to be preserved.

There is no stability in the land use with mixed use and therefore there is no sound justification. Mixed Use Moderate Intensity Zone (MX-M) allows 1/6 as many units as an R-4 zone but MX-M allows much more. The MX zone categories should only be allowed downtown not in any historical residential land use areas. SU-2/C-3 allows incompatible uses in enclosed buildings. The proposed zoning does not have this requirement and has less restriction with no public process. The designation of R-LM along Commercial on the east side between I-40 to Prospect is all single family dwellings and should not be zoned R-ML rather R-1. The current R-2 allows single family dwellings. The vacant property on Broadway and I-40 is recommended MX-T on a 0-1 zone. The intensity and density should not be allowed on this vacant lot. This should also be zoned R-1 because the predominant zoning is R-1. The housing on McKnight and Broadway is zoned Su-1b Planned Residential Development which is R-1 single family. The proposed R-ML does not match the current residential development. The property from Odelia Road to Hannet and Edith to Broadway is all residential R-1 zone. The MX-M and NR-LM should not be allowed in this area. (See City Zone Code Intent) The zones proposed for the property from the church to Odelia are proposed MX-T. This area is single family dwellings. The Planned Residential Development by GAHP is on High, Crespin and Cordero and should be zoned R-1. Some of the housing is not included as R-1. The single family dwellings along Franciscan between Kinley and San Ignacio Court is zone NR-LM and the current zoning is R-1. These corrections need to be made based on Resolution 270-1980 and the City Zone Code. The area that is stated as not classified is historical R-1 land use and should be zoned R-1. The housing all down from Walter to Broadway along both sides of Rosemont from Edith to Broadway and along Broadway should not be zoned NR-C. These are historic homes that are all single family dwellings. These dwellings are historical R-1 land uses. All the single family dwellings on both sides of Mountain Road NE from Woodward to Broadway are single-family R-1 zoning. The City is designating the C-3 zone with different zoning and how and why was this determined? The housing along Marble Avenue, Placido Martinez Road is zoned NR-C. There is existing historic homes and a Planned Residential Development is required under the current zone code to be R-1 zone. The property along Slate and High is given a different zoning from SU--2/C-3 to NR-C, but yet when the neighborhood requests R-1 it cannot be done. This zone category is not the same as the other MX-L and historically is a single family residential street. The R-3 or R-MH should not be allowed anywhere in Martineztown/Santa Barbara Neighborhood.

The proposed zoning is in conflict with the adopted elements of the Comprehensive Plan, Martineztown/Santa Barbara Sector Plan and the Intent of the City Zoning Code. The Sector Plan should remain to preserve the historical Martineztown/Santa Barbara including the Plan name and boundaries which are part of the historic significance and updated.

There was an error when the historical neighborhood was zoned heavy commercial and apartments. The historical residential land use is on record as R-1 single family dwellings. The record also shows that the neighborhood property owners pay single family residential taxes.

There is no justification that there has been a changed neighborhood or community conditions to justify the change. The neighborhood continues to be single family one story dwellings.

The different use category would not be advantageous to the community as articulated in the Comprehensive Plan or Sector Plan. (See Goal 4.1 Character, Comp Plan, MT/SBSDP, page 7, F. Goals/Objectives – promote the preservation and enhancement of a traditional community, eliminate conditions which are detrimental to public, health, safety and welfare, stabilize land use patterns and resolve land use and zoning conflicts.

Many of the use proposed uses are harmful to the residential area and should not be allowed. (See Goal 13.5 protect and maintain safe and healthy environments where people can thrive and Policy 13.5.4.)Walls and setbacks cannot prevent toxic air pollution.

The proposed uses will require major and un-programmed capital expenditures by the City and should be denied to lack of capital funds. Due to the efforts of Martineztown Work Group, the 1968 Santa Barbara Park was renovated. Since 1990, the neighborhood is waiting to see that Capital Improvement Projects are completed such as replace lighting on major streets I-40 underpass, Edith, Mountain, Odelia, Broadway, and Commercial, landscaping is done on Broadway, Lomas, and Mountain Road; repair of sidewalks, and Community Center.

The City of Albuquerque addresses the economic consideration throughout the Comp Plan process and the IDO process and according to Resolution 270-1980 this shall not be a determining factor.

The location on a collector or major street is not in itself sufficient justification for apartment, office or commercial zoning. The proposed IDO will not control congestion in the streets and will not abate unsightly use of buildings or land.

The change zone will not facilitate realization of the current and updated Comprehensive Plan and the adopted Martineztown/Santa Barbara Sector Plan to promote the preservation and enhancement of a traditional community eliminate conditions which detrimental to public health, safety and welfare, and conserve, improve and expand housing availability to all families.

MWG respectfully asks that EPC follow the current Comp Plan, the proposed Comp Plan, the Resolution 270-1980, the City Comprehensive Zoning Code and listen to the residents of Martineztown/Santa Barbara Neighborhood and stabilize the land use patterns and resolve land use and zoning conflicts by zoning our residential area R-1 prior to the adoption of the Integrated Development Ordinance (IDO) based on the above reasons. Furthermore, MWG requests that the Martineztown/Santa Barbara Sector Plan draft by Site Southwest is reviewed and approved by City Council and historical single family residential planned map area done by Site Southwest 2009 is approved prior to the approval of IDO.

Sincerely,

Loretta Naranjo Lopez, President
Martineztown Work Group

pc: Mayor Richard Berry
All City Councilors
All Commissioners
Representative Javier Martinez
Senator Gerald Ortiz y Pino
Commissioner Debbie O'Malley
Former Representative Rick Miera
Deacon Roberto Morrow, San Ignacio Church
Archbishop John C Wester, Archdiocese of Santa Fe
Father Anthony Pavlak, Canonical Priest, San Felipe de Neri
Deacon Robert Morrow, San Ignacio Catholic Church
Reverend Robert Woodruff, Second Presbyterian Church
Ivan Westergaard, St. Paul Lutheran
Anne Avalon, Director, Social Justice and Respect for Life, Archdiocese of Santa Fe,
Joaquin Sanchez, Lead Organizer, Albuquerque Interfaith

TAYLOR RANCH NEIGHBORHOOD ASSOCIATION INC.

P.O. Box 66288
Albuquerque NM 87193-6288

April 20, 2017

Karen Hudson, Chair
Environmental Planning Commission
Sent via email

RE: IDO—Zoning Conversion Map

The Taylor Ranch neighborhood includes some of Albuquerque's most important natural amenities. Our neighborhood is bounded on its west by Petroglyph National Monument and on the east by the Bosque and Rio Grande. Since development started occurring in Taylor Ranch in the 1980s, the citizens worked with City leaders to make new development work to protect the rare natural resources in our neighborhood. The effort to "preserve and enhance the natural features" is codified in the Westside Strategic Plan and the Coors Corridor Plans. And many SU-1 site plans do the same. The Taylor Ranch N.A. Board and community want the IDO to maintain this established policy to make sure development preserves and enhances the Escarpment and the Bosque.

In this letter, TRNA:

1. Points out to serious problems with the zone conversion for lands near the Bosque. We ask that those parcels be converted to the PD Zone.
2. Brings attention to the fact that much of the new Comprehensive Plan policies are not implemented in the IDO. Additional review of the IDO design standards is needed.
3. Presents the idea for a citizen Design Review Board for site plan review.
4. Continues to express concern about thresholds for administrative review and building heights.

TRNA is concerned that the **Zoning Map Conversions for land east of Coors between Western Trail and Alameda[1] are in error and the new zones would lead to conflict with the Comprehensive Plan.** Many of these parcels currently have SU-1 zoning or a C-1 Shopping Center zoning. The current zoning has resulted in the creation of site plans approved by the EPC that detail: uses, pedestrian orientation, architecture, outdoor patios, and general design guidelines to blend with the Bosque environment.[2] The EPC, the land owners, and the neighboring property owners have spent a great deal of time and resources to create detailed site plans. The straight zoning that is being proposed (NR-C and MX-L, MX-M and MX-T) will not

[1] This land was identified as Segments 3 and 4 in the Coors Corridor Plan and identified as having special characteristics for view preservation. The IDO identifies it as the Coors View Preservation Overlay.

[2] These site plan features are to achieve policies and regulations in the Westside Strategic Plan, the Coors Corridor Plan, and the former Comprehensive Plan.

meet the Comprehensive Plan policies for Heritage Conservation of Open Space, i.e.," to preserve and enhance the Bosque environment." In much of this area development is only a few hundred feet from the Bosque and the elevations are close to that of the Rio Grande, so the relationship between development and the natural Bosque is intimate. The NR-C and MX zone design standards are setup for citywide, urban development, and the zones are not in tune with the unique and special characteristics of this natural environment.

We ask that the EPC change parcels in the Coors View Preservation Overlay to the PD Zone. For decades, the EPC has taken the role to oversee that development proposals "preserve and enhance the Bosque." The PD zone would allow developers to take advantage of the site plans that have already been approved. If the parcel does not have an approved site plan, then the Comprehensive Plan and new IDO policies would guide the EPC review of such a site plan. The converted zoning, on the other hand, would likely incentivize developers to drop these site plans and do straight zoning with almost no requirements for the developments to enhance the Bosque environment.

The straight zoning shown on the proposed Zoning Conversion Map would allow projects to be developed that conflict with the following Comprehensive Plan policies:

> CP Policy 11.3.3
> Bosque: Regulate development on adjacent lands to preserve and enhance the Bosque as an important cultural landscape that contributes to the history and distinct identity of the region, as well as nearby neighborhoods.
>
> CP, 10.1.2.2 Open Space Overview
> "Open Space preserves and protects natural features and cultural resources of the city and county, creates a sense of place for residents and visitors, and provides educational and recreational opportunities….
> Views of significant natural landscapes can contribute to psychological and emotional health…
> Cultural resources and environmental education deepen understanding of the surround landscapes and how humans used and benefited from the land." p. 10-6
>
> CP Open Space Policy 10.3.2
> "Preservation: Identify and manage sensitive land within the Open Space network to protect their ecological function."
>
> CP Transportation:Multi-modal System Policy 6.2.3
> "b)Design pedestrian and bicycle circulation systems within private developments to fit the character of the site and minimize conflicts with vehicular traffic." P. 6-42

The EPC has needed to have discretionary authority in reviewing and shaping site development near the Bosque. Straight zoning does not afford the EPC this discretionary authority.

Two areas are of particular concern: **Coors and Montano and Coors and La Orilla.** These parcels have site plans in place that have been approved through rigorous review processes. Much public and private investment has been made in the approval process. Many developers have already complied with site plan guidelines and conditions and expect subsequent projects to follow the design guidelines. A distinct community character has been created. Making development compatible with the Bosque has been a major goal of the existing site plan design guidelines.

It would be imprudent for the City to revoke decades of investment of time and money in order to force these lands into a citywide zoning conversion. **A zoning conversion which uses a rote methodology is a major threat to protecting the Bosque which is the epitome of Albuquerque's Heritage and Cultural Identity**. The majority of the land involved in the conversion does not involve unique natural features. Where unique natural features exist, the rote conversion methods do the City a disservice. The PD zone is likely the best way to allow a conversion to take place without endangering the Bosque.

The IDO has policy for edge treatments on Major Public Open Space. While these policies provide protection needed for much of the edge of the Major Public Open Space, these policies are not adequate in this segment of the Bosque that is so close to Coors. Coors is a major arterial with substantial traffic and commercial business. Policy that covers the entire parcel from Coors to the Bosque can create a positive synergy of business development and customers enjoying the Bosque alongside recreationalists in the Bosque. Care in planning the development can also ensure that the Bosque ecosystem is not degraded.

Coors/Montano Site

The Andalucia site plan for subdivision involved 228 acres that has been under development for almost 20 years. Around 2005, the commercial northern portion of the development was separated and identified as North Andalucia. A large luxury apartment complex and credit union have been developed under the existing site plan for subdivision and building permit. A current project for a small grocery store and related uses is now in the approval process. Large tracts remain undeveloped and should be part of a consistent approach for development in an area next to the Bosque and also the Activity Center for Taylor Ranch.

Important features of that North Andalucia site plan are the:

--creation of a village center that is pedestrian oriented

--previous negotiations which became conditions of approval that no drive-throughs or gas stations could be built on the site. The drive throughs detract from a pedestrian village and result in huge trip generation per square feet. A gas station has the added disadvantage of underground petroleum storage tanks that could pose a threat to the groundwater of this area with a very high water table.

--compliance with the view preservation regulations of the Coors Plan is emphasized.

The zoning conversion to NR-C for the southeast corner of Coors and Montano would also work contrary to Comprehensive Plan policy that this parcel function as an "Activity Center." Both the old and the new Comprehensive Plans have identified this area as a center

place for the Taylor Ranch community. In the new Comprehensive Plan, Figure 5-4, p. 5-18 identifies this area as an "Activity Center."

The Comprehensive Plan states:

> "Activity centers provide convenient, day-to-day services at a neighborhood scale to serve the surrounding area within a 20-minute walk or a short bike ride. They are intended to provide a mix of neighborhood commercial and residential uses at a slightly higher density than the surrounding single-family homes. These smaller centers should incorporate good pedestrian friendly design and are appropriate for mixed-use and multi-family housing. Most Activity Centers will be smaller geographic areas than Urban Centers, with buildings that range from one to three stories and development patterns that support access by all transportation modes." P. 5-15
>
> CP Land Use Policy for Centers 5.1.6
> "….c) Encourage gathering spaces for festivals, markets , and street fairs.
> d) Ensure that Activity Centers are pedestrian-friendly and provide convenient pedestrian connections to nearby residential areas.
> e) Provide good connectivity via bicycle between Activity Centers and nearby residential areas and multi-use trails."
>
> CP Urban Design:Development Context
> "…prioritizing Centers to be the most pedestrian-oriented leverages public and private investment in higher-quality development. Enhancing pedestrian mobility and safety encourages pedestrian activity where it is most appropriate and welcome." P. 7-5

The NR-C and MX-M proposed conversion would likely lead to developments in conflict with these Comprehensive Plan policies. **This land should be converted to the PD Zone.**

Coors/La Orilla- Bosque Plaza Shopping Center

In 2006, this site was required to develop a site plan as a Shopping Center Site. It's current zoning is C-1, shopping center because it is over 5 acres; a site plan was required. The benefits of having a site place reviewed by the EPC for this large development proximate to the Bosque are:

> -- The site plan requires that this be an active pedestrian area. It is developed along La Orilla which is one of a few public entrances to the Bosque on the Westside. There is much pedestrian access to the Bosque here.
> --Outdoor patios are required for each business.
> --Compliance with the view preservation regulations of the Coors Plan is emphasized.
> -- A cohesive design with consistent architecture and landscaping makes a commercial project that is of higher value.
> --The site is limited to two businesses that have drive throughs (two have already been built) and one financial institution with a drive through (has not been be built).

The MX-L proposed conversion would likely lead to developments in conflict with the Comprehensive Plan policies listed above. **This land should be converted to the PD Zone.**

Land Use Goals

The premise of the IDO is that well executed design standards could replace some of the current zoning requirements that customize design standards for each site plan. Unfortunately, the proposed design standards have not been well vetted with the public and it is not clear that we yet have the design standards envisioned by the new Comprehensive Plan. That Comprehensive Plan infers that only when the standards are raised to a high quality level achieved by consensus, can the public hearing review process be dropped.

The Comp Plan states:

> "5-7.5 Public Engagement: Create a robust and meaningful public involvement process that builds long term consensus rather than project by project evaluation and approval.
>
> a) Provide regular opportunities for residents and stakeholders to better understand and engage in the planning and development process."

The current EPC review is rushed and the deisgn standards are buried amongst volumes of new policy and regulation. **The process so far has not "built long term consensus."** The design standards should be pulled out of the current review and taken back to the public for discussion sessions. Public discussion of the design standards has not occurred, except at a very superficial level. Reconciliation of design standards with policies in the Comprehensive Plan is also needed. Once the design standards have gone through more public vetting and revision, they could then return to the EPC for a final review.

The quality of the design standards is the foundation for the IDO's premise that more approval work could be moved from EPC hearings to administrative review. The standards so far are not well reviewed and are not adequate to make such a monumental change to the review process.

We also do not see that the Comprehensive Plan policy regarding the creation of "Centers" is well coordinated with the new zones. This gap needs evaluation.

Consider a new Citizen Review Board: Design Review Board

Many cities have two citizen review boards to handle the volume of planning and development review. The scope of work of the current EPC is huge and the workload is likely too heavy for a volunteer board. Consideration should be given to the creation of a citizen Design Review Board to handle significant site plans. A design review board would be populated with citizens with professional expertise in urban design, architecture, planning to review detailed site plans. (The would not need to represent each Council District, rather the various disciplines of site planning.) They would review the site plans against design standards. They would also be the appropriate

public body to make discretionary decisions, e.g. has the developer completed the standard to "the greatest extent practicable."[3]

This additional public board would free up the Environmental Planning Commission to do:

--comprehensive planning
--reviews of City capital investment to achieve Comprehensive Plan goals
--community planning assessments
--rezonings

The membership of the EPC would include a wider array of expertise, including neighborhood planning, community involvement, real estate development, transportation planning, etc.

Thresholds for EPC review of Site Plans

The TRNA Board reviewed the commercial threshold proposed at 100,000 square feet. They decided 100,000 was much too high. They debated between 50,000 and 75,000 as the threshold and decided on 50,000 s.f. of commercial square footage. But the real need is for there to be more information about determining a threshold. Development in the City is sophisticated and these thresholds are overly simplistic. There is no guidance for larger projects that may be phased over a long time (e.g. Andalucia in Taylor Ranch). It would be imprudent to have a system that incentivizes developers to chop there projects into phases in order to garner an administrative review. Sizeable projects need EPC (or a Design Review Board) review regardless of how the project phasing is divided.

Building Heights

TRNA remains concerned about building heights. Once again, height increases that are desired in certain parts of the city may not translate well to all areas of the City. More review and discussion of appropriate heights is needed. The NR-C zone height, in particular, needs more consideration.

Once again, the TRNA Board emphasizes that there is a huge amount of new public policy and regulation being created by the IDO now before the EPC. We request that the review process break the IDO into manageable pieces for review. We also recommend the Zoning Conversion Map have better vetting with the community and be reviewed in its own hearing process.

Thank you for your consideration of our ideas.

Sincerely,

Jolene Wolfley, Director
Government Affairs
Taylor Ranch Neighborhood Assn.

[3] There are several references in the IDO to the "greatest extent practicable." A public board with discretionary authority is the appropriate group to evaluate that criteria, not administrative staff.

From:	Elaine Hebard
To:	Planning Comp Plan-UDO
Subject:	Integrated Development Ordinance comments
Date:	Thursday, April 20, 2017 12:55:44 PM
Attachments:	Hebard comments to City Council 3-3-17.docx Hebard comments to LUPZ 12-14-16.docx

Dear Environmental Planning Commissioners,

While I would have liked to send in carefully constructed comments to the Integrated Development Ordinance, time constraints prevent that. So I join others in asking that this important process be slowed down.

However, in order to submit something, I am attaching the comments to the Comprehensive Plan which I sent to LUPZ and to the City Council as some of them might well be considered in the IDO.

In general, the majority of participants in the process wanted to see agriculture flourish and the valley remain green. To accomplish that will mean implementing Agricultural Protection Zoning concepts such as mentioned in Section 9 of my comments to the City Council. And real measures need to be taken to integrate water resources and land use planning, such as mentioned in both attachments.

I hope that you agree and include more provisions to address these issues in the IDO.

Thank you for your service,

Elaine Hebard

Comments on the draft Albuquerque/Bernalillo County Comprehensive Plan

December 14, 2016
Elaine Hebard
1513 Escalante SW
Albuquerque, NM 87104

Unfortunately, I have been unable to keep up with the various iterations of the Albuquerque/ Bernalillo County Comprehensive Plan. In part, that was because there were many plans being drafted at the same time, such as the Middle Rio Grande Regional Water Plan and the ABCWUA's new water plan. But that also points out a problem with the Comprehensive Plan – it is disconnected with the water plans.

This disconnect became most obvious during the hearings on the Santolina application. It was determined that the County had little to no authority over water despite the requirements in the planned Community Criteria. Even after the County entered into a Development Agreement, the Applicant still has not had to provide the required information. Now, a suggested 5-step approach is being proposed, where the land use plans will be approved prior to any determination is made as to the availability of water.

Meanwhile, the ABCWUA has determined that it must provide water should the land use plans be approved. At no time have the impacts of providing such water been evaluated.

Indeed, claiming that the ABCWUA is not a land use agency, the utility removed two important sub-policies in the revised policies adopted in September.

Imagine if various developments are approved and no one – not the county or the city or the ABCWUA-- is keeping track of the cumulative promises made to provide water. Nor are any of these local governments looking at the impacts to the region that providing this water means.

This is exactly the opposite of what must be done to create a vibrant, resilient city and county. Indeed, it s counter to the mission of the regional water plan -- to balance growth with renewable supply-- which all of the local governmental entities accepted.

To counter this, the comprehensive plan must include language such as:

Policy: Link Land Use Planning with Water Resources

The City and County shall coordinate and cooperate with the ABCWUA and all other entities with planning authority to integrate water resource management policies with land use, – regional transportation and other planning decisions, and the three entities shall collaborate to ensure consistent implementation of these policies.

Rationale: The City and County share the larger watershed with many other users and uses of water. Future water supplies are projected to become more variable and thus it will require greater coordination to integrate land use, watershed management, transportation, infrastructure, economic improvement, urban infill and planning efforts with water resources

management. Many land use commitments have been made, some with water commitments as well. Providing the cumulative amount of commitments will provide a transparent window to guide future development. Should future growth rely on transferring water rights from agricultural usage to urban usage, the impacts of such a transfer can be substantial.

1. In furtherance of the goal to balance growth with renewable supply, the City, County and ABCWUA shall develop policies and criteria requiring projected water demand of new development be offset with water efficiency measures to create a neutral impact on the overall service area demands and water use, which will be a part of any future development agreement.

2. Any review process shall require that each new residential, commercial, industrial and institutional development will have a resilient, sustainable water supply. This review process will consider the cumulative impacts of commitments already made, the costs of serving additional users, and the impacts to existing customers and to the region of serving additional uses.

3. The City and County shall adopt policies to integrate land use and transportation planning and water resource management in all government jurisdictions in the Middle Rio Grande water planning region; and take water supply availability and cumulative impacts into account into account when making land use development decisions.

4. The City and the County should work with the ABCWUA to develop a sustainable and coordinated growth management plan to: 1) reduce water consumption; 2) minimize impact on water resources; 3) encourage conservation-oriented economic development and 4) ensure adequate water supplies for any proposed development.

Comments to City Council
on the draft Albuquerque/Bernalillo County Comprehensive Plan

March 6, 2017
Elaine Hebard
1513 Escalante SW
Albuquerque, NM 87104

Summary: While it might appear that these comments are quite late in the process, they are the same or similar to ones I have made at the many meetings I attended, beginning with one of the inaugural ones at the Convention Center. And many of them go to some of the very basics of the Comp Plan. I included specific strategies in my submission of December 14, 2016. I am submitting this packet because thus far, these suggestions have not been addressed. Staff has suggested that water could be incorporated in the next Comp Plan update. Given its basic nature, I would suggest that the Comp Plan be modified now to include it.

In a nutshell, I do not believe that the issues I have raised are resolved in the draft plan.

1. Water, Our Common Source of Life, Merits its Own Chapter

➔ Suggestion: Create a chapter in the Comp Plan devoted to water.

➔ Suggestion: Create a web-based platform to show that interconnectedness.

➔ Suggestion: Create a water budget of withdrawals and consumptive uses for all users and uses for the county and the region into the Comp Plan. The Water Budget would guide land use practices and other actions to reduce water consumption.

2. Rather than simply coordinating, expand the scope of the Comp Plan to include the ABCWUA

➔ Suggestion: Integrate ABCWUA's water plan into the Comp Plan.

3. No Review of Cumulative Impacts = Divorce Between Water Resources and Land Use Planning

Chapter 13 starts off by saying, "Resilience is all about being able to overcome the unexpected. Sustainability is about survival. The goal of resilience is to thrive." Divorcing land use planning and water resources is not a recipe for survival, much less to thrive.

➔Suggestion: Add a policy that requires that member governments take water supply availability and cumulative impacts into account when making land use development and that member governments adopt policies integrating land use, transportation, economic development and other planning efforts with water resource management.

➔Suggestion: Create a web-based platform to show the accumulated impacts include timing

and amount of stream flows, land subsidence, water quality changes, aquifer recharge, and availability of water for other users.

➔Suggestion: Any review process shall require that each new residential, commercial, industrial and institutional development will have a resilient, sustainable water supply. This review process will consider the cumulative impacts of commitments already made, the costs of serving additional users, and the impacts to existing customers and to the region of serving additional uses.

➔Suggestion: In furtherance of the goal to balance growth with renewable supply, the City, County and ABCWUA shall develop policies and criteria requiring projected water demand of new development be offset with water efficiency measures to create a neutral impact on the overall service area demands and water use, which will be a part of any future development agreement.

4. Start with an Accurate Water Picture Today in Order to Plan for Tomorrow

➔ Suggestion: Create a complete water budget.

➔Suggestion: Add the need to reduce consumptive uses.

➔Suggestion: Integrate with ABCWUA and coordinate with rest.

➔Suggestion: Add to ACTIONs that the water budget described above will be completed and used to inform decisions.

5. Integrating Land Use and Water Resources is Needed Now!

➔ Suggestion: Incorporate the suggestions in Comment 3 into the Comp Plan with the goal to reduce water consumption.

6. Climate Variability is Being Experienced Already

➔ Suggestion: Include current information as to what climate change already means in the chapter on climate change.

➔ Suggestion: include a climate change evaluation metric to address resiliency.

➔ Suggestion: Rather than actions to "slow global climate change," that should read to "promote resource-efficient growth and development to help mitigate global climate change and adapt to its local impacts."

7. Monitor Impacts of Water Plan

➔ Suggestion: Measure, meter and monitor the impacts, such as those set out in Comment 3 above, of the ABCWUA Water Plan and integrate mitigation actions into other policies and

actions so as to achieve resiliency.

8. Aquifer Rising or Recharging?

➔ Suggestion: At the very least, make sure that pumping rates don't exceed recharge rates.

9. Agricultural Protection Zoning

➔ Suggestion: Incorporate APZ in the Comp Plan and implementation documents.

By incorporating water now, we can create a vibrant, resilient city and county as envisioned in the Comp Plan, balancing growth with renewable supply.

Thank you for considering these suggestions,

Elaine Hebard

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Written Material to Accompany Comments

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Preface: Thank you for the opportunity to comment on the draft Albuquerque/Bernalillo County Comprehensive Plan. And my thanks to staff responding to the concerns and suggestions I submitted on December 14, 2016 (lines 281 to 290). The references focused on Chapter 13, specifically Goal 13.2 (coordinate on decision-making about water), with Policies 13.2.1 and 13.2.2, and Policy 12.1.2 (coordinate to ensure consistency with ABCWUA plans). As such, my remarks are with Chapter 13 in mind.

Unfortunately, this is the first opportunity I've have to read even that part of the December draft. I did not have time to chase down the references to various other chapters to see if my concerns were captured. These comments are the same or similar to ones I have made at the many

meetings I attended, beginning with one of the inaugural ones at the Convention Center. And many of them go to some of the very basics of the Comp Plan. I included specific strategies in my submission of December 14, 2016. I am submitting this packet because thus far, these suggestions have not been addressed. Staff has suggested that water could be incorporated in the next Comp Plan update. Given its basic nature, I would suggest that the Comp Plan be modified now to include it.

Others have noted the urban-centricity of this Comp Plan. Hence, I specifically used agricultural examples throughout, also to be consistent. That is not to mean that environmental and urban concerns and thus examples could not have been used.

GENERAL COMMENTS

1. Water, Our Common Source of Life, Merits its Own Chapter

One of the goals of the 2004 regional water plan was to :balance growth with renewable supply." How can that be attained if water is stuffed into various chapters.

> 13.1.3.4 Natural Resources - Surface Water & Groundwater: "Water is such an important natural resource that it is called out as its own section in the climate change discussion (see section 13.1.3.2 above), in addition to as a utility in the Infrastructure, Community Facilities & Services chapter."

Water is such an important natural resource that it deserves its own chapter.

➔ Suggestion: Create a chapter in the Comp Plan devoted to water.

The Plan says, "Water resources are best managed within a watershed, because all the components of water ecology are interconnected at that level." (p 13-10)

➔ Suggestion: Create a web-based platform to show that interconnectedness.

➔ Suggestion: Create a water budget of withdrawals and consumptive uses for all users and uses for the county and the region into the Comp Plan. The Water Budget would guide land use practices and other actions to reduce water consumption.

2. Expand the Scope of the Comp Plan to Include the ABCWUA

Perhaps most striking in the responses was the repeated phrase:

> The Comp Plan does not have authority over ABCWUA. Direction is needed from decision-makers to expand the scope of Comp Plan policies to include such an analysis.

The response to Line 288 spelled out the problem further:

ABCWUA's role as a commenting agency on development projects is not impacted by the Comp Plan update. Their review process and the kinds of recommendations they make is an internal process to that organization and is not within the purview of City or Comp Plan direction.

The ABCWUA was created to reduce conflicts between the city and the County with regards to water services. Now it is not "within the purview of City or Comp Plan." Wrong direction.

Planning is about the future. That future requires that entities work together, especially with regard to water resources. Since the ABCWUA Board is made up of City Councilors and County Commissioners, such coordination should be fairly easy to accomplish. And if the Board's composition were to ever change, then such coordination would be even more essential.

Proposed Policy 13.2.1 calls for coordination but the action item is to "represent the interests of city and county water users on local, regional, and state water boards." That's not sufficient.

➔ Suggestion: Decision-makers: expand the scope of the Comp Plan to include the ABCWUA.

Short of including the ABCWUA in the Comp Plan itself, then the water plan must be integrated with land use plans and not just coordinated, in order to achieve resiliency. The water plan must be analyzed together with the other plans.

➔ Suggestion: Integrate ABCWUA's water plan into the Comp Plan.

3. <u>No Review of Cumulative Impacts = Divorce Between Water Resources and Land Use Planning</u>

While there is mention that water resources are best managed within a watershed, the policies do not get there. The closest is when the plan calls for "a total systems approach to water as a valuable resource" be followed, but that is under water quality.

Staff responses included that "Both the City and County take water supply availability into account during land use development decisions by taking comments from the ABCWUA," and "the Comp Plan encourages coordination with the ABCWUA about water." Policy 12.1.2 Water and Wastewater Utility: "Ensure consistency between Comp Plan and ABCWUA policies by coordinating infrastructure planning and programming." That is not sufficient.

Chapter 13 starts off by saying, "Resilience is all about being able to overcome the unexpected. Sustainability is about survival. The goal of resilience is to thrive." Divorcing land use planning and water resources is not a recipe for survival, much less to thrive.

As I noted in my December comments, in its newly adopted plan,[1] the ABCWUA removed

[1] Editing note: portions of the 12/16 draft Comp Plan acknowledge that the ABCWUA has adopted a new water resources management strategy, while other portions state that that is still forthcoming (see 13-12 for instance).

several specific policies which linked the agency with land use decisions. Here is one example which had been on the books since at least 2007, but never been formally implemented:

> 2007 Water Resources Management Strategy
>
> Policy L. Recommendation 7. The Authority should request that member governments take water supply availability and cumulative impacts into account when making land use development decisions and that member governments adopt policies integrating land use, transportation, economic development and other planning efforts with water resource management.

It would seem to be a perfect policy for the Comp Plan to include.

Instead, the Response to Line 282 was that "the Comp Plan does not ask for an analysis of the impact of providing water, as that is outside the jurisdiction of the City or County governments and lies more appropriately within the jurisdiction of the ABCWUA, which provides the water."

Exactly. Now no one from the City, the County or the ABCWUA will be analyzing the impacts of providing water -- especially the cumulative ones. Perfect lack of accountability. Why finalize the divorce between water resources and land use planning?

There are several impacts to various constituents which should be evaluated above and beyond what are now. As noted on page 13-10 with respect to stormwater management practices, "More impervious surfaces, compacted soils, and topographic modifications to the landscape over the past 100 years have changed the distribution and flow of water and the speed at which it drains back into remaining arroyos and the river. The cumulative modifications affect groundwater recharge and subsurface flows, and ultimately change the physical character of watersheds."

Such language should be reiterated in the Water & Agriculture section. When land and water are transferred from farming to urban uses, there is a reduction in recharge to the aquifer, with cumulative impacts being felt by all. There are also impacts unique to irrigating. such as having a sufficient amount of water pressure in the ditch. And there may well be challenges in finding sufficient rights to transfer to urban uses and consequential pressures on irrigating residents.

(Table 13-1, which sets out the scenarios for high, medium and low demand by ABCWUA customers by 2130, provides an example. Nowhere in that table nor in the text is there any mention of what such a demand might mean to the region. While the ABCWUA was granted paper water *permits* to pump from the State Engineer, it does not have the wet water *rights* to alone offset the depletions which would result from such usage. What impacts might there be to the region should the ABCWUA need to acquire additional water rights?[2])

A really recent protest to the State Engineer exemplifies the importance of river flow timing, another impact, to certain users:

[2] See Comment 7 below addressing Line 286 response that the new policy is that the ABCWUA will discontinue purchasing agricultural water rights.

Environmentalists challenge Rio Grande water transfer
The Associated Press, March 2, 2017
http://www.lcsun-news.com/story/news/2017/03/02/environmentalists-challenge-rio-grande-water-transfer/98665198/

> [A protest has been filed with the State Engineer] saying the transfer proposed by Rio Rancho [from Socorro] would result in reduced flows along nearly 100 miles of the river in central New Mexico.
>
> The group contends that changing the amount and timing of return flows to the river could negatively affect endangered species and the state's annual obligations to deliver a certain amount of water to Texas.

Additional impacts include the potentiality for land subsidence, reduction in surface water availability for use by irrigators and water quality changes. If no evaluation of these impacts is made by any of the entities involved, how can the goal of resilience be achieved?

The strategy in the draft Comp Plan is "Coordinating land use planning with all water agencies, including those that supply municipal and agricultural users or protect natural resources." Given that that has been on the books now for more than 13 years and has not been formalized, one suggestion is that there needs to be more formality to this strategy.

➔Suggestion: Add a policy that requires that member governments take water supply availability and cumulative impacts into account when making land use development and that member governments adopt policies integrating land use, transportation, economic development and other planning efforts with water resource management.

As Line 281 indicates, "ABCWUA has reviewed and provided comment on the Comp Plan drafts and have indicated that the policies in the Comp Plan are consistent and appropriately supportive of the ABCWUA process." That does not address the missing issues, such as the ones described in Comment 3. No Review of Cumulative Impacts. Rather than continue to go down separate paths, the need is to bring the entities together.

➔Suggestion: Create a web-based platform to show the accumulated impacts include timing and amount of stream flows, land subsidence, water quality changes, aquifer recharge, and availability of water for other users.

➔Suggestion: Any review process shall require that each new residential, commercial, industrial and institutional development will have a resilient, sustainable water supply. This review process will consider the cumulative impacts of commitments already made, the costs of serving additional users, and the impacts to existing customers and to the region of serving additional uses.

➔Suggestion: In furtherance of the goal to balance growth with renewable supply, the City, County and ABCWUA shall develop policies and criteria requiring projected water demand of new development be offset with water efficiency measures to create a neutral impact on the overall service area demands and water use, which will be a part of any future development

agreement.

4. Start with an Accurate Water Picture Today in Order to Plan for Tomorrow

One problem with using the State Engineer's (OSE) numbers in Figure 13-1: Water Demand by Source and Use Type in Bernalillo County (2010) and in the text without further definition leads to misperceptions. In this case, Withdrawals = Use = Demand, but only if Use ≠ Consumption.

But that's absurd. When we use something, we consume it. An example of how this matters can be seen if one considers what it means to MRGCD. A withdrawal occurs when MRGCD diverts from the river. Using that number makes it seem as if agriculture consumes all of that water. However, not included is the amount returned via the drains or which seeps into the aquifer. The amount agriculture actually *consumes* is much lower.

The difference between withdrawals and consumption can be illustrated from the conclusions John Shomaker & Associates came to using 1995 data for the three county region (Sandoval, Valencia and Bernalillo). At that time, it was determined that *withdrawals* amounted to 600,000 acre feet and *consumption* was found to be to 340,000 acre feet. The percentage consumed by various users changed, with agriculture representing 47% of the total withdrawals but only 27% when consumptive uses were used. [3]

Another problem with the OSE data is that it only reports withdrawals by humans, excluding non-human consumptive uses. The riparian area consumes a large amount but that is not included in Figure 13-1. [4] The Shomaker report found that riparian vegetation withdrew about 15% and consumed about 28% of the water in the three county area in 1995.

Not providing a complete water budget for the county and the region provides a misconception as to what water is available and what is consumed, and thus, if need be, what land use practices and other actions might need to be modified to reduce usage and avoid over-consumption.

➔ Suggestion: Create a complete water budget of withdrawals and consumptive uses for all users and uses for the county and the region into the Comp Plan. The Water Budget would guide land use practices and other actions to reduce water consumption.

➔Suggestion: Add to "Goal 13.2 Water Supply & Quality - Protect and conserve our region's limited water supply to benefit the range of uses that will keep our community and ecosystem healthy" the need to reduce consumptive uses.

[3] *Historical and Current Water Use in the Middle Rio Grande Region*, prepared by John Shomaker & Associates, Inc. and PioneerWest, June 2000, http://www.waterassembly.org/archives/MRG-Plan/H-Rio%20Grande%20Supporting%20Documents/SH%201-11%20Third%20Party%20Documents-Reports-Etc/SH-4%20%20Nims%20et%20al%20%28Shomaker%29.pdf.

[4] What is the source for the statement on page 13-11 that "in the Middle Rio Grande region, the updated water budget estimated that riparian evapotranspiration in recent years was about 150,000 acre-feet per year"? What updated water budget? How is one to compare that figure with the withdrawals in Figure 13.1 when one is regional and one is county specific? When using the term " Middle Rio Grande region," is the water planning region or the MRG Basin being referred to?

➔Suggestion: Change Policy 13.2.1 Water Supply to read: Integrate with ABCWUA and coordinate with state, and other agencies to plan and maintain an adequate water supply to meet municipal, agricultural, and ecosystem needs that ensure the overall resilience and sustainability of our community.

➔Suggestion: Add to ACTIONs that the water budget described above will be completed and used to inform decisions.

5. Integrating Land Use and Water Resources is Needed Now!

Integrating land use and water resources is not an esoteric issue. The region is already over-consuming. Our water use is constrained in part by the Rio Grande Compact, which is based upon depletions (i.e., consumption). Twenty years ago, the MRG was over-consuming its apportionment under the Compact by at least 55,000 acre feet per year.[5] Major conservation programs were implemented and resulted in dramatic reductions in consumption by agriculture and urban users. However, during this time, the surface water supply has also reduced, leaving the MRG in a similar situation to the 1990s but with the low-hanging fruit now picked, making it more difficult to meet Compact obligations.

This over-consumption of the Basin's apportionment under the Compact has resulted in deficit deliveries to Elephant Butte. The water reserves in the reservoir which existed in the early 2000s have disappeared. In 2015, there was basically a zero balance and in 2016, New Mexico came up short by approximately 3,000 af. [6] Texas invoked Article VIII, requiring the release of water in January, in the first time in decades. While deficits can accumulate, should future climatic conditions continue as projected, that could become a difficult hole to dig out of without real hardship.

The residents of the County and the City will not be immune should New Mexico fail to deliver sufficient water under the Rio Grande Compact. The law suit over failing to deliver sufficient water in the Lower Rio Grande may cost New Mexicans millions of dollars.[7] Our region does not have to wait for climate changes to impact us. Integrating land use and infrastructure planning by the City and the County to reduce consumptive uses is needed, *now*.

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[5] The 1999 Water Budget formed the basis of the alternatives in the *2004 MRG Regional Water Plan*, http://waterassembly.org/Archives/ Water%20Assembly%20Documents/Water%20Budget.pdf

[6] David Gensler, MRGCD Water Operations Manager, Minutes of the Three Thousand Second Regular Meeting of the Board of Directors of the Middle Rio Grande Conservancy District, January 9, 2017, http://www.mrgcd.com/uploads/FileLinks/8e154e458ffc439c82aa93578ba29a8d/MRGCD_Board_Mtg_Minutes__1_09_17_.pdf

[7] "The nation's highest court will likely have to settle a dispute between Texas and New Mexico over management of water from the Rio Grande – a case with the potential to dramatically curb groundwater pumping in some of New Mexico's most fertile valleys and force the state to pay as much as $1 billion in damages." NM *suffers setback in Texas water case*, by Susan Montoya Bryan / Associated Press,, July 13th, 2016, https://www.abqjournal.com/806979/high-court-will-likely-have-to-settle-nmtexas-water-dispute.html

➔ Suggestion: Incorporate the suggestions in Comment 3 into the Comp Plan with the goal to reduce water consumption.

6. Climate Variability is Being Experienced Already

The text on page 13-8 makes it appear that the impacts from climate change will be occurring sometime in the future. Yet the news continues to report that we are experiencing the hottest year ever, year after year, which is being borne out by reduced river flows.

An accurate water picture requires us to acknowledge these changes. It will make a difference as to what policies are selected for a variety of purposes, including economic development.

Acknowledgement of what is already occurring should be included in this section. For instance, why not include the Bureau of Reclamation Upper Rio Grande Impact Assessment[8]?

➔ Suggestion: Include current information as to what climate change already means in the chapter on climate change.

➔ Suggestion: include in 12.1.2.4 Interagency Coordination an evaluation metric to address resiliency.

➔ Suggestion: Policy 13.1.1 calls for actions to "slow global climate change." Change that to read to "promote resource-efficient growth and development to help mitigate global climate change and adapt to its local impacts."

7. Monitor Impacts of Water Plan

The ABCWUA has determined that it must provide water should the land use plans be approved. At no time are the impacts of providing such water been evaluated. Instead, the Comp Plan defers to the new water plan, *Water 2120:Securing Our Water Future*. [9] That includes the Groundwater Resource Management Plan (see Endnote [A] for more detail of the concept). What if the assumptions in the updated ABCWUA Water Plan are wrong? As Line 286 notes, the ABCWUA's "'Water 2120' specifically states that ABCWUA will discontinue purchasing agricultural water rights." True, the WRMS says that. The WRMS also claims that the ABCWUA can pump "a long-term average of about 75,000 [acre-feet/year] of groundwater while maintaining a water balance that results in no change in total system storage, and therefore, no long-term change in groundwater storage."

That means that 75,000 afy of mostly fossil water --roughly 90% is aged between 12,000 and

[8] *West-Wide Climate Risk Assessment: Upper Rio Grande Impact Assessment*, December 2013, http://www.usbr.gov/WaterSMART/ wcra/docs/urgia/URGIAMainReport.pdf
[9] http://abcwua.org/uploads/files/Water_2120_Volume_I.pdf.

17,000 years old[10]-- can be removed with no change to the aquifer? How is that possible? There is nowhere near that amount of water entering the aquifer at the levels from where the wells are drawing water.

The use of groundwater causes the river to lose water as it tries to replace the holes created by pumped water but it is not reaching those deep levels. So, that pumped water, after being used and treated, is delivered to the river to partially offset the depletions caused by pumping that water to begin with. An administrative rule allows for this credit, calling it a "return flow." But it does not return water to the deep levels where it was removed.

The WRMS uses many qualifiers when describing the new policy and the water balance assumes a base condition "as long as river water is available in sufficient quantity."[11] Given the reduction in river flows already being experienced -- the ABCWUA has been unable to divert for at least one month a year due to low river flows for the past few years, it seems rash to base a plan for 100 years on such an assumption. Another assumption, that the utility will use the entire San Juan-Chama allotment, fails for similar reasons. Which means that pumping will likely be more than estimated to meet the projected demand, further impacting residents (see Comment 3 above) in a domino effect. Furthermore, the WRMS concept is based upon administrative rules not changing and vested water rights not being challenged as we head into times of permanent shortages and law suits already filed. For those and other reasons, the policy that the ABCWUA will not need to buy pre-1907 water rights doesn't ring true to many.

The City and County have an obligation to ensure that the residents are not harmed by the actions of another agency. The best way to assure that would be to (a) expand the scope of the Comp Plan, (b) integrate the Water Plan with the Comp Plan and (c) assess the cumulative impacts of land use and water decisions, all as suggested above. To ensure that the cumulative impacts are assessed, a monitoring plan and model (see Comment 1) should be created.

➔ Suggestion: Measure, meter and monitor the impacts, such as those set out in Comment 3 above, of the ABCWUA Water Plan and integrate mitigation actions into other policies and actions so as to achieve resiliency.

8. <u>Aquifer Rebounding or Recharging?</u>

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[10] *Hydrogeology, Water Chemistry, and Transport Processes in the Zone of Contribution of a Public-Supply Well in Albuquerque, New Mexico, 2007–9*, by Laura M. Bexfield, Bryant C. Jurgens, Dianna M. Crilley, and Scott C. Christenson U.S. Geological Survey National Water-Quality Assessment Program, Scientific Investigations Report 2011–5182, http://pubs.usgs.gov/sir/2011/5182/sir2011-5182.pdf

[11] "While there is a lag time associated with pumping, drawdown, and river effect, the NMOSE model suggests that, if pumping were relatively stable over a long period, the river effect would approach an equilibrium state in which recharge from the river equals pumping from the aquifer. Timing to reach the equilibrium state depends on how far from equilibrium the system is, and could be on the order of **20 to 75 years**.

"Once this equilibrium state is attained, groundwater elevations stabilize (i.e. no additional drawdown). The deeper the equilibrium state drawdown, the greater the river effect and the more pumping could be sustained in perpetuity without continued drawdown (**as long as river water is available in sufficient quantity**). This equilibrium concept, or water balancing approach , is central to the [Groundwater Management Plan] presented below." Page 6, Chapter 4, *Water 2120:Securing Our Water Future*. (emphasis & highlights added)

Again, words matter. Is the aquifer recharging (defined as water being added to the aquifer), or is it rebounding (defined as groundwater re-establishing its equilibrium as the mining is reduced)? The former would indicate that surface water is being added to the groundwater supply.

Water in monitoring wells *is* rebounding, but it will not continue at the same pace. While some of the rise may be due to recharge, most is due to elastic rebound and to a lesser extent redistribution. Better would be to say something like "the reduction in pumping since 2008 has decreased the hydraulic stress on the aquifer and allowed ground water levels to rebound." Recharge rates have been largely unchanged for the last 20 years or more and at the very least we need to make sure that pumping rates don't exceed that rate.

➔ Suggestion: At the very least, make sure that pumping rates don't exceed recharge rates.

9. Agricultural Protection Zoning

Appropriately, acknowledgement is given in Chapter 13 to urban conservation results, but no mention is made of the reduction in water consumption by the MRGCD and its customers in the Water & Agriculture section. Overall, their diversions have been reduced by 40% from twenty years ago. Lands have been laser-leveled and many ditches have been lined. Farmers are implementing drip irrigation where appropriate. And lands have been converted to urban uses. These actions have consequences (see Comment 3 above), which need to be modeled and policies developed to attain the goals in Chapter 13.

Chapter 13 notes that "Farming is not only appreciated by the community at large for providing fresh, local food and protecting rural landscapes, but the traditions and lifestyle contribute greatly to local cultural diversity." It also states that "MRGCD's lands and facilities provide recreation opportunities and numerous environmental services." Neither note that MRGCD also provides drainage and flood control services to the valley.

MRGCD and BoR have responsibilities for the levees along the Rio Grande. The City administers the Rio Grande State Park, within the levees. Along with numerous other agencies, the city and county are responsible for abiding by a variety of policies with respect to the river. As the levees are upgraded, the roles they play should be included and integrated into an over-arching adaptation plan.

As the Land for Agriculture section recognizes, "Some of these lands may have greater monetary value for urban development, but their alternative value as a finite natural resource for food production should be recognized in land use planning. Planning efforts should evaluate how much farmland is required to support local food systems goals." In addition to local food production, benefits of farm lands include providing habitat for a variety of species and a view-shed for all of us. They provide ways for us to be resilient in the future. Such services have value and thus should be analyzed and mentioned.

One way to keep such services is to incentivize farmers to be able to continue farming and

providing all of those community benefits. Recognizing the value of recharge, linking farming, natural resource protection, and environmental education together by creating agricultural parks, urban-edge food belts, agricultural preservation districts, and advertising agriculture tourism are all ways to help the valley stay green.

An example I provided at earlier meetings was Agricultural Protection Zoning (APZ).[12] APZ is used to preserve the availability of agricultural lands for farming and provide stability to the farming economy. The local government designates areas where agriculture is intended to be the principal use. Regulations are established for these agricultural zoning districts to constrain non-agricultural development and uses. APZ regulations can help to:

- reduce conflicts between farm and non-farm uses;
- maintain a critical mass of farmland that keeps businesses and organizations that support farms, such as farm suppliers and granges, viable;
- protect prime agricultural soils, which, if developed, are irretrievable;
- keep land affordable for farmers;
- promote more efficient agricultural operations; and
- protect the character of the community.

➔ Suggestion: Incorporate APZ in the Comp Plan and implementation documents.

ENDNOTES

[A] *Water 2120:Securing Our Water Future*.
Chapter 4: Groundwater Resource Management Plan

Page 4-6: "Model results suggest that, recently, river effects have supplied more than 70 percent of water to wells, with aquifer storage providing the remaining 30 percent. The river effect has provided as much as about 100,000 afy to wells.

"To put this supply in context, a) natural recharge is about 100,000 afy, and b) average annual river flows are on the order of 1 million afy, indicating that the effect on the river is not large relative to total flow rates. ...

"The effect on the river must be offset in the form of treated wastewater returned directly to the Rio Grande, water rights, or surface storage releases to the Rio Grande . If groundwater pumping is reduced, it is possible for the river effect to exceed the pumping rates. While this last impact has not occurred on a Basin-wide basis, it has happened in the Albuquerque area in recent years, where groundwater production was greatly reduced by the advent of the San Juan-Chama Drinking Water Project. The Water Authority's river effects, which are offset with treated wastewater, native rights, and, if needed, additional San Juan-Chama water, exceed the Water Authority's groundwater pumping, resulting in a net addition of water to the aquifer (observed as rising water levels).

"While there is a lag time associated with pumping, drawdown, and river effect, the NMOSE model suggests that, if pumping were relatively stable over a long period, the river effect would approach an equilibrium state in which recharge from the river equals pumping from the aquifer. Timing to reach the equilibrium state depends on how far from equilibrium the system is, and could be on the order of 20 to 75 years.

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[12] http://conservationtools.org/guides/67-Agricultural-Protection-Zoning#heading_32

"Once this equilibrium state is attained, groundwater elevations stabilize (i.e. no additional drawdown). The deeper the equilibrium state drawdown, the greater the river effect and the more pumping could be sustained in perpetuity without continued drawdown (as long as river water is available in sufficient quantity). This equilibrium concept, or water balancing approach , is central to the GRMP presented below."

Page 4-10: "Change in Water Authority storage (combined aquifer and surface water reservoirs) is equal to the difference in water availability and water use. Water availability is assumed to equal the Water Authority's consumptive surface water rights of 74,590 afy (26,390 afy of Rio Grande surface water rights plus 48,200 afy of San Juan-Chama water; see Chapter 3: Supply).

"Accounting for evaporation and transit losses for San Juan-Chama water (on the order of 3,500 afy), total water availability for consumptive use can be assumed to be about 71,000 afy (total available supply = total supply – losses). Consumptive use of 71,000 afy corresponds to a total water demand of about 165,000 afy, given recent consumptive use of about 43 percent (see Chapter 2, Demand) of diversion. Assuming the DWP operation of about 90,000 afy over the long-term (full permitted use, less evaporative and transit losses), the Water Authority could use a long-term average of about 75,000 afy of groundwater (i.e. 165,000 –90,000 = 75,000) while maintaining a water balance that results in no change in total system storage, and therefore, no long-term change in groundwater storage."

From: Bondarenko, Randy
To: Planning Comp Plan-UDO
Subject: Emailing - Alb. IDO.pdf
Date: Thursday, April 20, 2017 1:00:10 PM
Attachments: Alb. IDO.pdf

Ms. Lehner, attached is a letter in regards to our concerns regarding the Integrated Development Ordinance that is being proposed by the City of Albuquerque.

Randy Bondarenko
Director, Retail Property
And Facilities Management
Western Refining Retail Division
Ofc.: 602-286-1922
Cell: 480-688-9315
Email: randy.bondarenko@wnr.com

Western Refining
RETAIL

WNR LISTED NYSE

April 20, 2017

Via Email and Federal Express

City of Albuquerque
Planning Commission
Attn : Catalina Lehner, Staff Planner
600 2nd Street NW
Albuquerque, NM 87103
abctoz@cabq.gov

Re: Western Refining Retail, LLC Comments to Integrated Development Ordinance

Dear Ms. Lehner:

Western Refining Retail, LLC ("Western Refining") has recently been made aware of the Integrated Development Ordinance ("IDO") that is being proposed by the City of Albuquerque. Given the volume of information contained in the IDO and the significant changes proposed, Western Refining has not been able to fully review the documents and information and is not yet able to provide comprehensive comments.

However, based on an initial review of the information we have reviewed so far, Western Refining has significant concerns about the potential adverse impact the IDO would have on our retail business in Albuquerque. Among other concerns that may arise during our review of the IDO, Western Refining anticipates significant negative business impacts resulting from several provisions in Chapter 14-16-3, and certain definitions contained in Chapter 14-16-6.

Further, to the extent the IDO would result in Western Refining not being able to continue to utilize certain liquor licenses or other real or personal property it already owns, the IDO would appear to be a taking of property through eminent domain as set forth in New Mexico Statutes, which would entitle Western Refining to substantial compensation for the taking of those property rights.

Western Refining provides a significant number of jobs in Albuquerque and makes substantial contributions to the community. Accordingly, Western Refining respectfully requests that its opposition to the IDO be noted at the April 24, 2017, hearing, and that it be afforded the opportunity to provide comprehensive comments at a later date and before any final decision on or approval of the IDO.

Sincerely,

From:	aboard10@juno.com
To:	Planning Comp Plan-UDO; Schultz, Shanna M.
Subject:	Comments of the IDO / EPC April 24th Hearing
Date:	Thursday, April 20, 2017 1:01:05 PM
Attachments:	Comments for the April 24th, 2017 EPC..doc

Hello,
I am sending in my comments for the April 24th EPC/IDO hearing to meet the 48 hour rule. Please see attachment.
Rene' Horvath

PS: Please let me know that you received them.

Rene' Horvath's Comments on the IDO for the April 24th EPC Hearing

Dear Chairwoman Ms. Hudson and fellow Commissioners,

The following items need more public review and input:

1. Parking: Maintain the current parking requirements. The IDO is proposing to reduce the parking requirements to allow more building square footage on sites with less space for parking. This reduction in on-site parking requirements for apartments and businesses is forcing off-site parking in adjacent neighborhoods. This also becomes a safety issue for people who are forced to park off site in dark areas, along busy roadways, or cross busy highways to get to their intended destination. This is a nuisance to neighborhoods and a safety issue for pedestrians. A more thorough study is needed with public input to determine appropriate parking requirements for establishments, before any reductions are made to the current zone code parking requirements.

2. Fast Food Restaurants with Drive up windows: This issue needs to be addressed. Fast food restaurants with drive up windows are being requested more often with each development proposal. As many as 3, 4, 5 fast food restaurants/drive up windows are requested for just one project site. These types of establishments create a much higher trip generation, than sit down restaurants, making the development site very chaotic with random vehicle movement within a shopping center site, and making a very un-safe pedestrian environment. The IDO is not adequately addressing this issue. A study is needed to evaluate drive up establishments, with the public's input to determine how many fast food restaurants with drive up windows should be allowed for one site, which sites are appropriate and which ones are not for drive up establishments, and how to design a site to handle the internal traffic movement of a drive through. This study should also include other drive up window establishments and other auto oriented, high traffic generating uses including gas stations, etc.

3. Car Washes: There are two types of carwashes, one that is a low use /self -serve car wash and other is the big industrial carwashes. It is unclear how the IDO is handling each type of carwash. An industrial carwash has a high trip generation and it produces a lot of noise from the sprays and blowers which it uses to clean vehicles. The Industrial carwash needs to be in areas that allow direct driveway access to a major street and away from residential zoned areas or areas where peace and solitude is expected such as churches and Open Space, etc.

4. Adult Entertainment: Over the years, efforts have been made to place these types of uses into more industrial areas, away from commercial and residential areas. The IDO has not adequately addressed this issue and opens the door for more opportunity to expand these uses in more areas of Albuquerque where there is none now. More study with public input is needed on this issue.

5. Building height and Density: Building Height and density are both hot topics in the IDO. There is a lot of concern regarding these two issues. This will be a big change for Albuquerque and needs a much more public review and input. Albuquerque is a scenic area which the public enjoys. Also, too much density creates greater impact to the surrounding area in regards to more traffic, overcrowded schools, crime, or the need for more services or infrastructure improvements. Much more public input is needed on these topics regarding building height and density, before decisions are made by the EPC.

6. Neighborhood Edge transition zones: The IDO is recommending that the Neighborhood Edge Transition zone, be 30 ft. max. building height within 100 ft. from houses. The current Albuquerque zone code C-2 regulation, reads: "structures shall not exceed 26 ft. in height within 85 ft. of a lot zoned for houses". **I recommend we keep the current 26 ft. max. height** currently seen in the C-2 regulation (Pg. 2-47 Zone Code), versus the 30-ft. proposed maximum building height for a Neighborhood Edge Transition zone.

7. Zoning Designations: It is still unclear as to why it was necessary for the IDO to change the current zone code maps and zone designations. These changes make a huge impact on what kind of permissive and conditional uses are allowed and what the building dimensions will be for those designations. Most of the public has no idea that these changes are being made to the current zone maps and zone code. The topic alone needs much more time and attention for public scrutiny and input than has been given.

The IDO is a huge undertaking with monumental changes to our current zone code. For those who have been following the Comp Plan/IDO hearings, the last Council hearing on the Comp Plan was March 20th. This only allowed a few short weeks for the public participants to start reviewing the IDO. Despite all the City meetings that were held, there was not enough time to discuss the details and adjust the IDO before it went before the EPC for review. The Neighborhoods have requested more time to review and understand the IDO. This should have been done before it went to the EPC. If it is determined that the IDO is the way to go, then more time is needed for evaluation and public input before it goes to the EPC for review and approval. Our zone code has served Albuquerque for many years, and should be not be discounted so easily. If the City cannot give the time needed to go over the IDO with the public, then the current Zone code should remain in place.

Rene' Horvath